grows in Corn-fields in ſome Parts of *Eſſex*, and flowers in *May*. The Seed is uſed.

It is hot and dry, and ſomewhat diuretic, provoking Urine, and helping the Dropſy, Gout, Sciatica, and forwarding the menſtrual Evacuations.

The Seed of this Plant is what ought to be uſed in the Theriaca and Mithridate; but, being very ſcarce, the Seed of the next may be uſed as a Succedaneum for it. *Miller's Bot. Off.*

It is found in Corn-fields, tho' rarely, and flowers in *June*: The Parts uſed are the ſmall, black, oblong, acrimonious Seeds, which are drying and abſtergent; and principally uſed in breaking internal Abſceſſes, provoking the Menſes, and curing Iſchiadical Affections, and the like. *Dale.*

2. Thlaſpi; arvenſe; Vaccariæ folio incano; majus. *C B. P.* 206. *Boerh. Ind. A.* 2. 7. *Thlaſpi vulgare.* Offic. *Thlaſpi vulgatiſſimum.* Ger. 204. Emac. 262. *Thlaſpi vulgatius.* J. B. 2 261. Ran Hiſt. 1. 830. Synop. 3. 305. Tourn. Inſt. 212. *Thlaſpi Mithridaticum ſeu vulgatiſſimum, Baccariæ folio.* Park. Theat. 835. MITHRIDATE MUSTARD.

The Root of this *Thlaſpi* is ſmall and woody, from which ariſe Stalks ſcarce a Foot high, ſingle, or but little branched, thick ſet with long, narrow, ſoft, and hairy green Leaves, broad at Bottom, with two ſharp Ears, and ſharp-pointed at the End; the Flowers are ſmall and numerous, growing in little Spikes on the Tops of the Stalks, four-leaved, and white; and are ſucceeded by little round Seed-veſſels, much leſs than the former, containing dark-brown Seed. It grows frequently in Corn-fields, and flowers in *May*.

The Seed of this Thlaſpi, as was before obſerved, is generally uſed inſtead of the former, being, like that, heating and drying, and ſuppoſed to have the ſame Virtues. *Miller's Bot. Off.*

The Seed enters the Compoſition of the Theriaca; and, externally uſed, cleanſes all Sorts of running Ulcers; and is, alſo, a Ptarmic, but not very common. It is reckoned an Enemy to pregnant Women, becauſe it kills the Fœtus. *Schroder.*

3. Thlaſpi; ſpicatum; Perſicum; perfoliatum; marinum; foliis inferioribus tenuiter inciſis; ſuperioribus â caule Perfoliatæ modo penetratis. *M. H.* 2. 294. *Naſturtium Orientale, foliis inferioribus Milleſolium, ſuperioribus Perfoliatum referentibus.* T. 214.

4. Thlaſpi; capitulis hirſutis. *J. B.* 2. 922.

5. Thlaſpi; capſulâ cordatâ; peregrinum. *J. B.* 2. 927.

6. Thlaſpi; parvum; ſaxatile; flore rubente. *C. B. P.* 107. *Lithothlaſpi quartum, carnoſo, rotundo folio.* Col. 1. 279.

7. Thlaſpi; montanum; ſempervirens. *C. B. P.* 106.

8. Thlaſpi; Creticum; quibuſdam; flore rubente & albo. *J. B.* 2. 924. *Draba, ſive Arabis, ſive Thlaſpi Candiæ.* Dod. *p.* 713.

9. Thlaſpi; Cappadocicum; flore albo. *H. Eyſt. Æſt.* o. 7. *F.* 11. *Fig.* 3.

10. Thlaſpi; umbellatum; arvenſe; amarum. *J. B.* 2. 925.

11. Thlaſpi; Virginianum; foliis Iberidis amplioribus & ſerratis. *T.* 213. *Iberis, humilior, annua, Virginiana, ramoſior.* M. H. 2. 311.

12. Thlaſpi; arvenſe; perfoliatum; majus. *C. B. P.* 106. *Burſa Paſtoria, foliis Perfoliatæ.* J. B. 2. 938.

13. Thlaſpi; Roſa de Hiericho dictum. *M. H.* 2. 328. *Roſa Hierichuntina vulgo dicta.* C. B. P. 484. *Boerh. Ind. alt. Plant. Vol.* 2.

The *Thlaſpi* has the highly penetrating Taſte of Garlick, diffuſing itſelf over all the Mouth.

The firſt and ſecond Species, in particular, have the Savour of the ſtrongeſt and moſt penetrating Garlick, nor are the reſt deſtitute of it; whence the Seeds of this Plant are an Ingredient in alexipharmic and theriacal Medicines, in which they ſo promote Perſpiration, as by their aromatic Virtue to expel any Poiſon by Sweat or Diaphoreſis; for the ſame Reaſon it is commended againſt the Peſtilence; it is, alſo, an Antiſcorbutic, Diuretic, and ſtimulates to Venery.

The third has the Appearance of the *Milleſolium*, with the Leaves of the *Perfoliata*; and would juſtly be prefer'd by M. *Tournefort* to *Naſturtium*, were it not for its Taſte.

The tenth Species is extremely bitter, and of a moſt penetrating Quality; for, if chewed, it provokes Plenty of Spittle; and all Plants which have this Effect, are very good Aperients; for they act after the ſame manner on the Stomach.

The eleventh, alſo, is highly penetrating; two Ounces of the Seed of the *Thlaſpi*, bruiſed, are a noble Diaphoretic in Caſe of Poiſon, being taken in *Rheniſh* Wine; or in the Plague, being exhibited in Vinegar. It is a very good Remedy in cold Diſeaſes, and the Seeds are uſed in breaking internal Abſceſſes, and provoking Urine, and the Menſes; but they are to be given with great Caution to Women with Child, leſt, by exciting too great a Commotion in the Uterus, they ſhould cauſe Abortion. Externally uſed by way of Injection, they cleanſe and abſterge Ulcers; they are applied, alſo, in Pains of the Sciatica, and are Ingredients in the *Theriaca*.

All tetrapetalous ſiliquous Plants, from the *Crambe* to the *Cakile*, if chewed, affect the Mouth with a kind of biting Acrimony, have ſomething of Heat, and a feud Smell, that is, not the Smell of an Herb, but the Feudnes of an Onion, and always putrefy in the ſame manner. Hence theſe Plants abound with an alcaline volatile Salt, of which others are not ſo full; and hence, alſo, they are all Antiſcorbutics, and of Service in a Coldneſs and Viſcidity of the Humours. Since, therefore, theſe Plants ſtimulate to Venery, and provoke Luſt, they appear to be heating, ſudorific, and diaphoretic; by which Qualities they act in Oppoſition to an Acid. But then theſe Plants are not to be uſed in hot Diſeaſes; whence it is that they grow in cold Countries, a few excepted. If the aromatic Particles in them excel in Subtility, they ſhew a diaphoretic Quality; if in Acrimony, the Plant is ſudorific. None of them are poiſonous, but all equally good, and of Service, where an inert Phlegm, or Acid, are very predominant. *Hiſt. Plant. adſcript. Boerh.*

THLASPI is, alſo, a Name for ſeveral Sorts of ALYSSON, and THLASPIDIUM; which ſee.

THLASPI CLYPEATUM. A Name for the *Ionthlaſpi*; *minimum*; *ſpicatum*; *lunatum*.

THLASPI FATUUM. See BURSA PASTORIS.

THLASPI SAXATILE. A Name for the *Ionthloſpi*; *luteo flore*; *incanum*; *montanum*; Διοσκορίδης.

THLASPI UMBELLATUM. A Name for the *Naſturtium*; *ſylveſtre*; *Dalechampii*.

THLASPIDIUM. Baſtard Mithridate Muſtard.

The Characters are;

The Fruit is, in a manner, double, ſmooth, conſiſting of two Parts, ſeparated by an Interclosure, and containing each a ſingle Seed, which is generally of an oblong and flatiſh Figure.

Boerhaave mentions ſeven Sorts of *Thlaſpidium*; which are,

1. Thlaſpidium; fruticoſum; folio Leucoii; ſemper florens. *T.* 214. *Thlaſpi, latifolium, platycarpon, Leucoii folio.* Rar. 55.

2. Thlaſpidium; fruticoſum; Leucoii folio variegato; ſempervirens. *T.* 215.

3. Thlaſpidium; hirſutum; calyce floris auriculato. *T.* 214. *Thlaſpi biſurcatum, villoſum, flore calcari donato.* C. B. P. 107. Prodr. 49. *Leucoium montanum, flore pedato.* Col. p. 2. 61.

4. Thlaſpidium; Raphani folio. *T.* 214. *Thlaſpi, biſcutatum, Raphani aut Irionis, folio.* Bocc. Rar. 45.

5. Thlaſpidium; Monſpelienſe; Hieraci folio hirſuto. *T.* 214. *Thlaſpi biſcutatum, aſperum, Hieraciſolium, & majus.* C. B. P. 107. *Lunaria biſcutata.* J. B. 2. 935. *Leucoium biſcutatum, aſperum, Hieraciſolium, majus.* M. H. 2. 249.

6. Thlaſpidium; Apulum; ſpicatum. *T.* 215. *Thlaſpi biſcutatum, aſperum, minus.* C. B. P. 107. *Jondraba Apula, alyſſoides, ſpicata.* Col. p. 1. 285. *Leucoium, biſcutatum, aſperum, minus.* M. H. 2. 249.

7. Thlaſpidium; annuum; flore pallide luteo. *T.* 214. *Thlaſpi biſcutatum, annuum, aſperum.* H. R. Par. *Boerh. Ind. alt. Plant. Vol.* 2.

It is called *Thlaſpidium*, from the *Thlaſpi*, which, in ſome meaſure, it reſembles; and is an oleraceous Plant, without any medicinal Uſe. *Hiſt. Plant. adſcript. Boerhaav.*

THLIBIÆ, from θλίβω, to compreſs. Perſons whoſe Teſticles are contuſed.

THLIPSIS, θλῖψις, from θλίβω, to compreſs, a Compreſſion. Θλῖψις στομάχου, in *Galen's Iſagoge Pulſuum*, is a Compreſſion of the Stomach from Food, which is offenſive only by its Quantity, and not endued with any remarkable Quality, or from a Conflux of Humours void of Acrimony into the Part.

THOCOS, θῶκος. See THACOS.

THOLEROS, θολερὸς, from θόλος, Mud; turbid, foul, muddy. Θολερὸν πνεῦμα, "a turbid Reſpiration," is expounded in *Galen's Exegeſis*, by μέγα καὶ δεδιωγμένον, "a great and raiſed (or "quickened) Reſpiration." The Expreſſion occurs, *Lib. de Humoribus*, and in ſeveral Places in 1 *Prorrhet.* and *Coac.* As to its Meaning, we find *Galen, Com.* 2. *in Prorrhet.* thus diſcourſing, τὸ δ' θολερὸν πνεῦμα τί ποτε ὀνομάζει τῶν ἀσαφῶν ἐστι, &c. "As for the θολερὸν πνεῦμα, what it imports, remains an Ob- "ſcurity; and the more, becauſe it no-where occurs in the "*Prognoſtics*, nor in the *Aphoriſms*, nor in any genuine Book. "If it be ſaid, that *Hippocrates* uſed θολερὸν πνεῦμα, in the ſame "Senſe as θολερὸν οὖρον, 'turbid Urine,' we underſtand the Mean- "ing of the latter very well from thoſe who uſe the Expreſſion of "*turbid*, or *foul* Water, every Day, and from *Hippocrates* him- "ſelf, who ſays, it is like that whoſe Sediment is diſturbed, or "like the Urine of Dray-horſes. But what we are to under- "ſtand by a *turbid*, or *foul* Spirit, (Reſpiration) is by no means "obvious, ſince no Perſon calls the Air turbid (θολερὸς) in the "ſame Senſe as he calls the Water ſo, unleſs he be told, that it is "filled with Vapours; which, indeed, is the Senſe in which ſome "take the Expreſſion, telling us, that, as we obſerve an Effuſion "of Sweat under a Syncope, ſo, in a Reſolution of the internal "Parts, there is an Efflux of the Humours within; and for that "Reaſon a Multitude of Vapours is diſcharged in Expiration; "and this is the θολερὸν πνεῦμα, 'the turbid Reſpiration.'" He ſays the ſame in another Place, and endeavours to prove, that θολερὸν πνεῦμα was not written by *Hippocrates*. Again, at the End of his ſecond Comment, (on *Prorrhet. T.* 92.) he ſays, "that this θολερὸν πνεῦμα, as he obſerved before, was of am- "biguous Signification; but in that Place it ſeems reaſonable to "be underſtood of Expiration; but here ſome will have it meant "of Eructations, others of Flatuoſities. We ſaid before, that

" θολερὸν was, by ſome, expounded δυσῶδες, fetid; by others, " ἀτμῶδες, vaporous" [See THALEROS]. The ſame Author, *Lib. de Trem. Palpit.* &c. calls by the Name of θολερὸν πνεῦμα, a groſs, thick, dark, and cloudy Spirit or Wind contained in the Muſcles, or within the Skin, and proceeding from ſome refrigerating, condenſing and emplaſtic Cauſes: To this groſs Spirit is oppoſed what is thin, pure, and limpid.

Tholeros, θολερὸς, " turbid," is often apply'd by *Hippocrates* to the Urine, as, alſo, to the Stools, Menſes, and Spit; in which latter Caſe it ſignifies ſordid, muddy, feculent.

THOLOS, Mud. But in *Galen* it is a Name for a Species of Bandage for the Head.

THORA. A Name for the *Ranunculus, Cyclaminis folio, Aſphodeli Radice; major.*

THORACICA. Medicines for Diſorders of the *Thorax*, or Breaſt.

THORAX. The Breaſt.

By the Thorax we commonly underſtand all that Part of the Body, which anſwers to the Extent of the Sternum, Ribs, and Vertebræ of the Back, both outwardly and inwardly.

The Thorax is divided into the anterior Part, called commonly the Breaſt; the poſterior Part, called the Back; and the lateral Parts, called the Right and Left Sides.

The external Parts of the Thorax, beſides the Skin and Membrana Adipoſa, are principally the Mammæ, and the Muſcles which cover the Ribs, and fill the Spaces between them. In the Mammæ we ſee the Papillæ, or Nipples, and a ſmall coloured Circle which ſurrounds them. The Muſcles are the Pectorales majores and minores, Subclavii, Serrati majores, Serrati ſuperiores poſtici, Latiſſimi Dorſi, and Vertebrales; and to theſe we may add the Muſcles which cover the Scapula.

The internal Parts of the Thorax are contained in the large Cavity of that Portion of the Trunk, which the Antients called the middle Venter; but the Moderns name it ſimply the Cavity of the Breaſt. This Cavity is lined by a Membrane named Pleura, and divided into lateral Cavities by a membranous Septum, named Mediaſtinum, which is a Production or Duplicature of the Pleura.

Theſe Parts are the Heart, Pericardium, Trunk of the Aorta, great Arch of the Aorta, Trunks of the carotid Arteries, Subclavian Arteries, Trunks of the vertebral and axillary Arteries, the ſuperior Portion of the deſcending Aorta, the intercoſtal Arteries, the Vena Cava Superior, Vena Azygos, Subclavian Veins, Trunks of the Jugular, vertebral and axillary Veins, a Portion of the Aſpera Arteria, and of the Oeſophagus, the Ductus lacteus, or Thoracicus, the Lungs, pulmonary Artery, pulmonary Veins, *&c.*

The Arteries and Veins, which particularly belong to the Thorax, are theſe:

Arteriæ & Venæ Thoracicæ, ſuperiores & inferiores.

Arteriæ & Venæ Mammariæ, externæ & internæ.

Arteriæ & Venæ Intercoſtales, ſuperiores & inferiores.

Arteriæ & Venæ Spinales, with the venal Sinuſes of the Canal of the Spine.

The Nerves diſtributed to the Thorax, are theſe:

Nervi ſympathetici Medii, or the eighth Pair.

Nervi ſympathetici Univerſales, commonly called Intercoſtales.

The laſt cervical Pair.

The twelve dorſal Pairs.

Nervi Diaphragmatici.

The Cavity of the Thorax is terminated downward by the Diaphragm, which parts it from the Abdomen.

The whole Extent of the Thorax, in a living Subject, is commonly determined, not only by the Sternum Vertebræ of the Back and Ribs, but, alſo, by all that Space contained between the Articulations of the two Arms with the Scapulæ and Claviculæ; and, in this Senſe, the Outſide of the Thorax is broader above than below, in an healthy Subject, who has a moderate Quantity of Fleſh on his Bones.

This Breadth of the upper Part of the Breaſt proceeds from the Pectorales majores, and Latiſſimi Dorſi, viewed directly forward or backward. But when we take a direct lateral View of the Breaſt, it appears narrower above than below, not only in an entire Subject, but even after every thing has been removed, that cover the Sides of the Thorax, and in the Skeleton itſelf.

The common Integuments of the Thorax are the ſame with thoſe of the Abdomen; and the convex Side of this Part of the Body is, likewiſe, covered by ſeveral Muſcles. Anteriorly we find the Pectorales majores and minores, a large Portion of the Serrati majores, the Subclavii, a Portion of the Scaleni, and of the Obliqui Abdominis Externi: Poſteriorly, we have all the Muſcles which cover both Sides of the Scapula, the Serrati Poſtici, and a Part of the Sacro-lumbares, Longiſſimi Dorſi, Vertebrales, *&c.* Among all the external Parts of the Thorax, only two are peculiar to it in the human Body, I mean the two Eminencies called Mammæ.

The hard Parts which form the Sides of the Cavity of the Thorax, are the twelve Vertebræ of the Back, all the Ribs, and the Sternum. The ſoft Parts, which complete the Sides, are the Membrane called Pleura, which lines the Cavity, and the Muſculi Intercoſtales, Sterno-coſtales, and the Diaphragm.

All theſe hard and ſoft Parts, taken together, repreſent a kind of Cage, in ſome meaſure of a conical Figure, flatted on the fore Side, depreſſed on the back Side, and, in a manner, divided into two Nooks, by the Figure of the Vertebræ of the Back, and terminated below by a broad-arched Baſis inclined backward. The intercoſtal Muſcles fill up the Interſtices betwixt the Ribs, and ſo complete the Sides of the Cavity: The Baſis is the Diaphragm, and the Pleura not only covers the whole inner Surface of the Cavity, but, by forming the Mediaſtinum, divides it into two, one on the Right Hand, the other on the Left.

For the Breaſts, ſee MAMMÆ.

For the Pleura and Mediaſtinum, ſee PLEURA.

For the Thymus, ſee THYMUS.

For the Heart, ſee COR.

For the Lungs, ſee PULMONES.

For the Oeſophagus, ſee OESOPHAGUS.

The Ductus Thoracicus is under the Article CHYLUS. *Winſlow.*

Mr. *Monro* tells us, that the Ribs, or *Coſtæ*, (as if they were *Cuſtodes* or Guards to theſe principal Organs of the animal Machine, the Heart and Lungs) are the long crooked Bones placed at the Side of the Cheſt in an oblique Direction downwards, with reſpect of the Back-bone. Their Number is generally twelve on each Side, though frequently eleven, or thirteen, have been found. I never ſaw fewer or more than the ordinary Number; but in the Skeleton of a Boy about eight Years old, now in my Poſſeſſion, the fourth and fifth Ribs of the Left Side are grown together at their Roots for near an Inch; and, afterwards dividing, have the ſame Appearance as the Ribs of the oppoſite Side, which are naturally formed.

The Ribs are all convex externally, and concave internally, where they are, alſo, made ſmooth by the Action of the contain'd Parts, which on this account are in no danger of being hurt by them. The Extremities of the Ribs, next the Vertebræ, are rounder than after theſe Bones have advanced forwards, when they become flatter and broader, and have a ſuperior and inferior Edge, each of which is made rough by the Action of the intercoſtal Muſcles, inſerted into them. Theſe Muſcles, being all of near equal Force, and equally ſtretched in the Interſtices of the Ribs, will reſiſt theſe Bones, having their broken Ends, in a Fracture, removed far out of their natural Places to interrupt the Motion of the vital Organs.

The upper Edge of the Ribs is more obtuſe and rounded than the inferior, which is depreſſed on its internal Side by a long Foſſa, for lodging the intercoſtal Veſſels and Nerves. This Chanel is not obſervable, however, at either Extremity of the Ribs; for at the poſterior, or Root, the Veſſels have not yet reached the Ribs; and, at the anterior Extremity, they are ſplit away into Branches, to ſerve the Parts between the Ribs; which plainly teaches Surgeons, how much ſafer it is to perform the Operation of the Empyema, towards the Sides of the Thorax, than either near the Back or Breaſt, tho' there were no other Reaſons to determine them in the Choice of the Place, where this Operation ſhould be performed.

At the poſterior Extremity of each Rib, a little Head is formed, which is divided by a middle Ridge, into two plain or hollow Surfaces, the inferior of which is the broadeſt and deepeſt. The two Plains are joined to the Bodies of two different Vertebræ, and the Ridge forces itſelf into the intervening Cartilage. A little Way from this Head, we find on the external Surface a ſmall Cavity, where mucilaginous Glands are lodged; and round the Head the Bone appears ſpongy, where the circular Ligament of the Articulation is fixed. Immediately beyond this, a flattened Tubercle, riſes with a ſmall Cavity at, and Roughneſs round the Root of it, for the Articulation of the Rib, with the tranſverſe Proceſs of the loweſt of the two Vertebræ, with the Bodies of which the Head of the Rib is joined. Advancing ſtill a little further on this external Surface, we obſerve another ſmaller Tubercle, into which the Tendons of the *Longiſſimus Dorſi* are inſerted. Soon after this the Ribs make a conſiderable Curve, which ſome call their Angle; into it the *Sacro-lumbalis* is inſerted. Then the Rib begins to turn broad, and continues ſo to its anterior Extremity, which is hollowed and ſpongy, for the Reception of, and firm Coalition with, the Cartilage which runs thence to be inſerted into the Sternum, or to be joined with ſome other Cartilages. In Adults, generally, the Cavity at this anterior Extremity of the Ribs, is ſmooth and poliſhed on its Surface, by which the Articulation of the Cartilage, with it would ſeem deſigned for Motion; which, however, is not allowed.

The Subſtance of the Ribs is ſpongy, cellular, and only covered with a very thin external lamellated Surface, which is thicker and ſtronger near the Vertebræ, than at the anterior Extremity.

To each Rib a long, broad, and ſtrong Cartilage is fixed, and reaches thence to the Sternum, or is adjoining to the one next it: This Courſe, however, of theirs, is not a ſtrait Line with the Rib; for generally the Cartilages make a conſiderable Curve, the concave Part of which is upwards; therefore, at their Inſertion

tion into the Sternum, they make an obtuſe Angle above, and an acute one below. Theſe Cartilages are of ſuch a Length, as never to allow the Ribs to come to a right Angle with the Spine, but keep them ſituated ſo obliquely, as to make a very conſiderable obtuſe Angle above, 'till once a Force ſuperior to the Elaſticity of the Cartilages is applied. Theſe Cartilages, as all others, are firmer and harder internally, than they are on their external Surface, and ſometimes in old People, according to *Veſalius*, all their middle Subſtance becomes bony, while a thin cartilaginous Lamella appears externally, tho' the Oſſification begins much oftener at the external Surface. The greateſt alternate Motions of the Cartilages being made at their great Curvature, that Part, as *Havers* has remarked, remains frequently cartilaginous after all the reſt is oſſified.

The Ribs are, then, articulated at each Extremity, of which the poſterior is doubly joined to the Vertebræ, for the Head is received into the Cavities of two Bodies of the Vertebræ, by a Species of Ginglymus; and the larger Tubercle is articulated to the tranſverſe Proceſs of the inferior Vertebræ, by what is commonly called Arthrodia. As ſoon as one conſiders this double Articulation, he muſt immediately ſee, that no other Motion can here be allowed than up and down, ſince the tranſverſe Proceſſes hinder it from being thruſt back; the Reſiſtance on the other Side of the Sternum prevents the Ribs coming forward; and each of the two Joints, with the other Parts attached, oppoſe their turning round: But then 'tis likewiſe as evident, that even the Motion upwards and downwards can be but ſmall in any one Rib at the Articulation itſelf, tho' it may be very conſpicuous at the anterior Extremity, which moves in a Circle, whoſe Radius is the Length of the Rib. If, at the ſame time, we conſider, how obliquely the Ribs are ſituated with reſpect to the Vertebræ, we muſt be convinced, that the Ribs cannot be raiſed without removing farther from the Back-bone; and, as a conſiderable Reſiſtance is made by the Sternum, to their anterior Extremities, theſe Bones muſt, in moving upwards, be, alſo, turned outwards, as *Winſlow* has proved. The anterior End of the Ribs has no proper moveable Articulation, except ſo far, as the Catilages between the Sternum and Ribs will yield, on which account, and becauſe of the Reſiſtance, ſuch Ribs as perform large Motions under theſe Diſadvantages, are commonly twiſted towards their anterior Extremities.

Hitherto I have laid down the Structure and Connection, which moſt of the Ribs enjoy, as belonging to all of them; but muſt now conſider the Specialities, wherein any of them, either collectively or ſingly, may differ from the general Deſcription given, or from each other. In viewing the Ribs from above downwards, their Figure is ſtill ſtraiter, the uppermoſt being the moſt crooked or any. Their Obliquity, with reſpect to the Spine, increaſes as they deſcend; ſo that tho' the Diſtance of their poſterior Extremities from each other is very little different; yet at their anterior Extremities, the Diſtances between the inferior ones muſt increaſe. In conſequence, too, of this increaſed Obliquity of the inferior Ribs, each of the Cartilages of the inferior Ribs make a greater Curve in its Progreſs from the Rib towards the Sternum; and the Tubercles, which are articulated to the tranſverſe Proceſſes of the Vertebræ, have their ſmooth Surface gradually facing more upwards. The Ribs becoming thus more oblique, while the Sternum advances forward in its Deſcent, make the Diſtance between the Sternum and the anterior Extremity of the lower Ribs greater, than between the Sternum and the ſuperior Ribs; conſequently the Cartilages of thoſe Ribs that are joined to the Breaſt-bone, are longer in the lower ones. Theſe Cartilages are placed nearer to each other, as the Ribs deſcend, which aſſiſts to make the Curvature of the Cartilages greater. The Length of the Ribs increaſes from the firſt or uppermoſt Rib, as far down as the ſeventh, and from that to the twelfth as gradually diminiſhes.

The ſuperior of the two plain, or rather hollow Surfaces, by which the Ribs are articulated to the Bodies of the Vertebræ, gradually increaſes from the firſt to the fourth Rib, and is diminiſhed after that in each lower Rib; and the Diſtance of their Angles from the Heads always increaſes, as they deſcend to the ninth. This is remarked by *Winſlow*.

The Ribs are commonly divided into True and Falſe.

The true Coſtæ are the ſeven ſuperior of each Side, whoſe Cartilages are all gradually longer as the Ribs deſcend, and are joined to the Breaſt-bone: So that being preſſed conſtantly between two Bones, they are flatned at both Extremities, and are thicker, harder, and more liable to oſſify than the other Cartilages, which are not ſubject to ſo much preſſure. Theſe Ribs include the Heart and Lungs, and therefore are the proper or true *Cuſtodes* of Late.

The five inferior of each Side are the Falſe, or Baſtard, whoſe Cartilages do not reach the Sternum; and therefore, wanting that Reſiſtance at their anterior Extremity, are there pointed, and, for the ſame Reaſon, being leſs preſſed, the Subſtance of theſe Cartilages is ſofter. The Cartilages of theſe falſe Ribs are ſhorter as the Ribs deſcend. To all theſe five Ribs, the circular Edge of the Diaphragm is connected; and its Fibres, inſtead of being ſtretched immediately tranſverſely, and ſo running perpendicular to the Ribs, are preſſed ſo as to be often, eſpecially in Expiration, parallel to the Plan in which the Ribs lie; one may even judge by the Attachments, which theſe Fibres have ſo frequently to the Sides of the Thorax, a conſiderable way above where their Extremities are inſerted into the Ribs, and by the Situation of the Viſcera, always to be obſerved in a dead Subject laid ſupine, that there is conſtantly a large Concavity, formed on each Side by the Diaphragm, within theſe baſtard Ribs, in which the Stomach, Liver, Spleen, &c. are contained, which, being only reckoned among the Viſcera Naturalia, have occaſioned the Name of Baſtard Cuſtodes to theſe Bones.

Hence we may eaſily underſtand the Juſtice of *Hippocrates's* Rule, in ſimple Fractures of the falſe Ribs, without a Fever, to keep the Stomach moderately filled with Food, leſt the pendulous Ribs, falling inwards, ſhould thereby increaſe the Pain and Cough. The Truth of this Obſervation *Paré*, after his long Experience, confirms; but it is now-a-days much forgot, or entirely neglected.

The uppermoſt or firſt Rib has ſeveral proper Specialities, ſome of them contradictory to any Character yet delivered of the Ribs; for the Figure of it is much more curve, than any of the reſt; whence the Name of *ἀντισφαι retortæ*, has been applied to it and the ſecond. The Situation of the firſt is ſuch, that the flat Sides are ſuperior and inferior, while the Edges are anterior and poſterior, or nearly ſo; therefore ſufficient Space is left above it, for the Subclavian Veſſels and Muſcle; and the broad concave Surface of it is oppoſed to to the Lungs: But then, in conſequence to this Situation, the Chanel for the intercoſtal Veſſels is not to be found, and the Edges are differently formed from all the other, except the ſecond, the lower one being rounded, and the other ſharp. The Head of this Rib is not divided into two plain Surfaces by middle Ridge, becauſe it is only articulated with the firſt Vertebræ of the Thorax. The Cartilage, at the anterior Extremity of the firſt Coſta, is oſſified in Adults, and is united to the Sternum at right Angles. Frequently this firſt Rib has a Ridge, riſing near the middle of its poſterior Edge, where one of the Heads of the Scalenus Muſcle riſes; and, nearer to the anterior Extremity, it is flattened, or ſometimes depreſſed by the Clavicle.

The third and fourth Ribs have been diſtinguiſhed by the Name *σφραι, ſolidæ*; the fifth and ſixth, by the Appellation of *σφριτιδες, pectorales*, the ſeventh and eighth are called *παφσυφαι, diſtractæ*. But it muſt be acknowledged, there is no great Occaſion, or good Reaſon, for theſe Names, ſince theſe Ribs ſcarce can claim any thing particular, but what comes under the general Deſcription, or belongs to more than two of them. The fifth, ſixth, ſeventh, or rather the ſixth, ſeventh, eighth, and ſometimes fifth, ſixth, ſeventh, eighth, and ninth, Ribs have their Cartilages, at leaſt, contiguous; and frequently they are conjoined by croſs Cartilages; and moſt commonly the Cartilages of the eighth, ninth, and tenth, are connected to the former, and to each other, by firm Ligaments.

The eleventh, and ſometimes the tenth, Rib has no Tubercle for its Articulation with the tranſverſe Proceſs of the Vertebræ, to which it is only looſely fixed by a Ligament. The Foſſa, in its inferior Edge, is not ſo deep as in the ſuperior Ribs, becauſe the Veſſels run more towards the Interſtice between the Ribs. Its anterior Extremity is ſmaller than its Body, and its ſhort ſmall Cartilage is but looſely connected to the Cartilage of the Rib above.

The twelfth Rib is the ſhorteſt and ſtraiteſt: The Head of it is only articulated with the laſt Vertebra of the Thorax; therefore it is not divided into two Surfaces. This Rib is not joined to the tranſverſe Proceſs of the Vertebræ, and therefore has no Tubercles, being often pulled neceſſarily inwards by the Diaphragm, which an Articulation with the tranſverſe Proceſs would not have allowed. The Foſſa is not found at its under Edge, becauſe the Veſſels run below it. The anterior Extremity of this laſt Rib is ſmaller, than its middle, and has only a very ſmall pointed Cartilage fixed to it. To the whole Length of this Rib internally the Diaphragm is connected.

The Ribs are all complete in a new-born Child; only their Cartilages are proportionally longer than in an adult Perſon.

Here I cannot help remarking the wiſe Providence of our Creator, in preſerving us from periſhing, as ſoon as we come into the World. The Extremities, by which the Bones of the Limbs are articulated, remain in a cartilaginous State after Birth, and are many Years before they are entirely united to the main Body of their ſeveral Bones; whereas the Condyles of the occipital Bone, and of the lower Jaw, and the Heads and Tubercles of the Ribs, are true original Proceſſes, and oſſified before Birth; and therefore the Weight of the large Head is firmly ſupported, the Actions of Sucking, Swallowing, Reſpiration,

ration, &c. which are indiſpenſably neceſſary for us, as ſoon as we come into the World, are perfomed without any Danger of the Parts of the Bones, which are moſt preſſed on in theſe Motions, being ſeparated; whereas, had theſe Proceſſes of the Head, Jaw, and Ribs, been Epiphyſes at the Birth, Children muſt have been expoſed to an evident Danger of dying, by ſuch a Separation, whoſe immediate Conſequences would be the Compreſſion of the Beginning of the Medulla Spinalis, or want of Food, or of Reſpiration.

The STERNUM.

The Sternum, or Breaſt-bone, is the broad flat Bone, or Pile of Bones, at the anterior Part of the Thorax. The Number of Bones this ſhould be divided into, has occaſioned Debates among Anatomiſts, who have conſidered it in young Subjects of different Ages. In Adults of a middle Age, it is compoſed of three Bones, which eaſily ſeparate, after the Cartilages connecting them are deſtroyed: Frequently the two lower Bones are found intimately united; and very often, in old People, the Sternum is a continued bony Subſtance, from one End to the other, tho' on the Surface of it we may ſtill obſerve two, ſometimes three tranſverſe Lines, which mark out the former Diviſions.

When we conſider the Sternum as one Bone, we find it broadeſt and thickeſt above, and becoming ſmaller as it deſcends: The internal, or poſterior Surface of this Bone, is ſomewhat hollowed for enlarging the Thorax; but the Convexity on the external Surface is not ſo conſpicuous, becauſe the Sides are preſſed outwards by the true Ribs, the round Heads of whoſe Cartilages are received into ſeven ſmooth Pits, formed in each Side of the Sternum; and are kept firm there by ſtrong Ligaments, which on the external Surface, have a particular radiated Texture: Frequently the cartilaginous Fibres thruſt themſelves into the bony Subſtance of the Sternum, and are joined by a ſort of Suture. The Pits at the ſuperior Part of the Sternum are at the greateſt Diſtance one from another, and, as they deſcend are nearer, ſo that the two loweſt are contiguous.

The Subſtance of the Breaſt-bone is cellular, with a very thin external Plate, eſpecially on its internal Surface, where, with *Jac. Sylvius*, we may frequently obſerve rather a cartilaginous Cruſt ſpreads over it. On both Surfaces, however, a ſtrong ligamentous Membrane is cloſely braced; and the Cells of this Bone are ſo ſmall, that a conſiderable Quantity of oſſeous Fibres muſt be employed in the Compoſition of it: Whence, with the Defence the Muſcles give it, and the moveable Support it has from the flexible Cartilages, it is ſufficiently ſecured from being broke by any ſmall external Force: For it is ſtrong by its Quantity of Bone; its Parts are kept together by the Ligaments; and it yields enough to elude conſiderably the Violence offered.

So far in general may be ſaid of this Bone: But, to deſcend to its particular Deſcription, let us examine the three Bones, which, according to the common Accounts, go to the Compoſition of it in an Adult.

The firſt, all agree, is ſomewhat of the Figure of an Heart, as it is commonly painted; only it does not terminate in a ſharp Point. This is the uppermoſt thickeſt Part of the Sternum.

The ſuperior middle Part of this firſt Bone, where it is thickeſt, is hollowed, to make place for the Trachea Arteria, tho' this Cavity is principally formed by the Clavicles preſſing on one Side, and by the Sterno-maſtoidei Muſcles pulling the Subſtance of the Bone above, to both which it yields while it is ſoft; and therefore is rais'd into two Tubercles, while the middle is not protruded by ſuch Powers. On the Outſide of each Tubercle there is an oblong Cavity, that, in viewing it tranſverſely from before backwards, appears a little convex: Into theſe *Glenæ* the Extremities of the Clavicles are received. Immediately below theſe, the Sides of this Bone begin to turn thinner; and in each a ſuperficial Cavity, or a rough Surface, is to be ſeen, where the firſt Ribs are received or conjoined to the Sternum. In the Side of the under Extremity of this firſt Bone, half of the Pit for the ſecond Rib on each Side is formed. The ſuperior Part of the poſterior Surface is covered with a ſtrong Ligament deſcribed by *Weitbrecht* and *Winſlow*, which ſecures the Clavicles.

The ſecond or middle Diviſion of this Bone is much longer, narrower, and thinner, than the firſt; but, excepting that it is a little narrow above, is pretty equal all over as to its Dimenſions of Breadth or Thickneſs. In the Sides of it are complete Pits for the third, fourth, fifth, and ſixth Ribs; and half of the Pits for the ſecond and ſeventh are formed in it. Near its Middle an unoſſified Part of the Bone is ſometimes found, which, freed of the ligamentous Membrane, or Cartilage, which fills it, is deſcribed as an Hole; and in this Place, for the moſt part, we may obſerve a tranverſe Line running, which has made Authors divide this Bone into two. When the Cartilage between this and the firſt Bone is not oſſified, a manifeſt enough Motion of this upon the firſt may be obſerved in Reſpiration, or in raiſing the Sternum, by pulling the Ribs upwards in a recent Subject.

The third Bone is by much the leaſt, and has only one half of the Pit for the ſeventh Rib formed in it; wherefore it might be reckoned only an Appendix of the Sternum. In young Subjects it is always cartilaginous, and is better known by the Name of Cartilago Xiphoides or Enſiformis, than any other, tho' the Antients often called the whole Sternum, Enſiforme, comparing the two firſt Bones to the Handle, and this Appendix to the Blade of a Sword. This Bone is ſeldom of the ſame Figure, Magnitude, or Situation, in any two Subjects; for ſometimes it is a plain triangular Bone, with one of the Angles below, and perpendicular to the middle of the ſuperior Side, by which it is connected to the ſecond Bone. At other times the Point is turned to one Side or other, or obliquely forwards or backwards.

Frequently it is all of near an equal Breadth, and in ſeveral Subjects the Extremity of it is biſurcated; whence ſome Writers give it the Name of *Furcella* or *Furcula inferior*; or elſe it is perforated in the Middle. In the greateſt Number of Adults it is oſſified, and tipped with a Cartilage; in ſome it is half or wholly cartilaginous.

So many different ways this ſmall Bone may be conſtituted without any Inconvenience: But then ſome of theſe Poſitions may be ſo directed, as to bring on a great Train of ill Conſequences; particularly, when the lower Extremity is entirely oſſified, and is too much turned outwards or inwards, or when the Conjunction of this Appendix with the ſecond Bone is too weak.

Rolfincius relates the Hiſtory of an old Man, who could not bend his Body forwards, without a violent pungent Pain from the Oſſification and ſharp Point of this Bone. *Paaw* aſſures us, he has ſeen ſeveral Inſtances of a difficult Breathing from the ſame Cauſe; and enumerates ſeveral Diſeaſes, ſuch as a *Phthiſis pulmonalis*, Obſtructions of the Spleen, Liver, or Meſentery, which may depend on too great a Relaxation of this Cartilage; and ſometimes this Relaxation may only be a Conſequence of theſe Diſeaſes. *Borrichius* confirms all this by ſome Examples. But, not to be tedious in relating ſuch Hiſtories, I ſhall refer you to *Bonetus*, who has ſeveral Examples collected; and will direct you to the Writers on this Subject, which in the laſt Century employed ſeveral Pens, tho' it is now much neglected. This Neglect is the more ſurpriſing, ſince the Connection of the Diaphragm here, the Situation of the large Lobe of the Liver, and of the Stomach, and the conſtant Preſſure and Rubbing of our Clothes on this Part, leads us naturally to conſider the Effects of a faulty Structure and Situation of this Bone.

The Sternum is joined by Synchondroſis to the ſeven ſuperior Ribs, unleſs when the firſt coaleſces with it in an intimate Union of Subſtance; and it is articulated with the Clavicles by a Ginglymus of the ſecond Kind.

The Sternum moſt frequently has four round ſmall Bones, ſurrounded with Cartilage, in Children born to the full time; the uppermoſt of theſe, which is the firſt Bone, being the largeſt by much. Two or three other very ſmall bony Points are, likewiſe to be ſeen in ſeveral Children. The Number of Bones increaſes for ſome Years, and then diminiſhes, but uncertainly, till they are at laſt united into thoſe above deſcribed of an Adult.

The Uſes of this Bone are, to afford Origin and Inſertion to ſeveral Muſcles; to ſuſtain the Mediaſtinum; to defend the vital Organs, the Heart, and Lungs, at the anterior Part; and, laſtly, by ſerving as a moveable Fulcrum of the Ribs, to aſſiſt conſiderably in Reſpiration: Which Action, ſo far as it depends on the Motion of the Bones, we are now at Liberty to explain.

When, then, the Ribs which are connected by their Cartilages to the Sternum, or to the Cartilages of the true Ribs, are acted upon by the intercoſtal Muſcles, they muſt all be pulled from the oblique Poſition their Cartilages kept them in, nearer to right Angles with the Vertebræ and Sternum, becauſe the firſt or uppermoſt Rib is by much the moſt fixed of any; and their large arched middle Part, will be turned outwards, to increaſe the Diſtance between the Sides of the Thorax, or to widen this Cavity; while, by raiſing the Ribs nearer to right Angles, the Diſtance between the parallel Lines, which comprehend their Extremities, is increaſed: And as the Vertebræ hinder the Ribs from receding back, this whole Increaſe muſt be by the Advance of theſe Extremities forwards. Hence, the intermediate Fulcrum, the Sternum, preſſed ſtrongly on both Sides, muſt be puſhed forwards, and that, at its ſeveral Parts, in Proportion to the Length and Motion of its Supporters, the Ribs; that is, moſt at its inferior Extremity; which, thus forced forwards, will, with the Cartilages now in the ſame manner acted upon, draw the Diaphragm connected to them; conſequently ſo far ſtretch it, and bring it nearer to a Plain: And the ſame Power which raiſes this Bone and Cartilages, will ſufficiently fix them, ſo that they may reſiſt the Action of that Muſcle, whoſe Fibres contract at the ſame time, and thruſt the Viſcera of the Abdomen downwards. The arched Part of the Ribs being thus moved outwards, the anterior Extremity of the Ribs, and the

Sternum,

Sternum, being advanced forwards, and the Diaphragm being brought nearer to a plain Surface, inſtead of being greatly convex on each Side, within each Cavity of the Thorax, 'tis evident how conſiderably the Cavity, of which the nine or ten ſuperior of theſe Bones are the Sides, muſt be widened, and made deeper and longer. But while this is doing in the ſuperior Ribs, the inferior, whoſe Cartilages are not conjoined, perform a very different Office, tho' it conſpires to the ſame Intention, the Enlargement of the Thorax. For as they have no fixed Point, to which their anterior Extremity is faſtened, and have the Diaphragm inſerted into them, at the Place where that Muſcle runs pretty ſtrait upwards from its Origin at the Vertebræ; therefore theſe Ribs being expoſed on the one Side to the direct Action of this ſtrong Muſcle, and of the Muſcles of the Abdomen, which at this time are reſiſting the ſtretching Force of the Bowels, and are drawing theſe Bones down, while the intercoſtal Muſcles are pulling them upwards, the Effect of either of theſe Powers, which are Antagoniſts to each other, is very little as to the moving the Ribs either up, or down. But the Muſcles of the Abdomen, being puſhed at this time outwards by the Viſcera, carry theſe Ribs along with them; and thus the Thorax is not only to be ſhortened, but is really widened at its lower Part, to aſſiſt in making ſufficient Space for the due Diſtention of the Lungs.

As ſoon as the Action of theſe ſeveral Muſcles ceaſes, the elaſtic Cartilages, extending themſelves to their natural Situation, depreſs the ſuperior Ribs, and the Sternum ſubſides; the Diaphragm is thruſt up by the Abdominal Viſcera, and raiſes the inferior Ribs with it, in which it is aſſiſted by any Action their intercoſtal Muſcles have, while the oblique and tranſverſe Muſcles of the Belly ſerve to draw theſe Ribs inwards, at the ſame time: From all which the Cavity of the Breaſt is diminiſhed in all its Dimenſions. Thus, then, the Thorax is made wider, deeper, and longer; and is, again, ſtraitened and ſhortened in a manner not generally ſo well underſtood. *Monro's Oſteol.*

Diſorders of the *Thorax*, which require the Aſſiſtance of Surgery:

For Fractures of the Ribs; and Clavicles, ſee FRACTURA.
For Luxations of the Ribs, and Clavicles, ſee LUXATIO.
For Bandages proper for the Breaſt, ſee FASCIÆ.

Wounds inflicted in the Thorax, and not penetrating into its Cavities, are known by Sight; by the Probe; by the Impoſſibility of procuring a Diſcharge of the Air by any Art; by the Return of any tepid Liquor injected into the Wound; by placing the Patient in the Poſture he was in when the Wound was received; and by the ſure Signs of an Adheſion of the Lungs to that Part of the Pleura, thro' which the Wound is made.

The Thorax is that Part of the human Trunk, which, before, is terminated by the Sternum; behind, by twelve Vertebræ of the Back; on the Sides, by the arched Ribs; above, by the two ſuperior Ribs; and, below, by the Diaphragm, which ſeparates it from the Abdomen. But as the Thorax forms a kind of arched Vault, which riſes in the Middle, and is lower at the Edges, 'tis obvious, that its Cavity muſt be far greateſt towards the hinder or poſterior Parts. Internally this whole Cavity is lin'd with an highly ſmooth Membrane, call'd the Pleura; which, as is ſhewn under the Article VULNUS, forming, as it were, two hollow Bladders, approaching to each other near the Sternum, divides the Thorax into two equal Cavities. Between theſe two Portions of the Pleura is ſituated the Pericardium, with the Heart, which conſtitutes the third Cavity of the Thorax.

In all Wounds of the Thorax, 'tis firſt to be inquired, Whether they have penetrated into its Cavities, or not? When the wounding Inſtrument has perforated the Pleura, or the Pericardium, then the Wound is ſaid to penetrate into the Cavity of the Thorax; but otherwiſe not. Many Parts, however, may be very dangerouſly wounded, tho' the Wound does not penetrate into the Cavities of the Thorax; for the Pleura on both Sides, when it reaches to the Sides of the Bodies of the Vertebræ, ſeparates from the laſt Extremities of the Ribs, and, riſing thence, leaves a pretty large Space poſſeſſed by the cellular Membrane, thro' which the Oeſophagus, the Aorta, and the thoracic Duct, paſs. All the Parts, therefore, ſituated here, may be hurt, tho' the Wound does not penetrate into the Cavities of the Thorax; but 'tis ſufficiently obvious, that this can rarely happen, becauſe in the poſterior Part the Bodies of the Vertebræ are pretty ſecurely defended. That a Wound has not penetrated into the Cavities of the Breaſt, may be known from the following Signs.

By the Sight: When, for Inſtance, the Wound is ſufficiently large, and has penetrated in a ſtraight Direction.

By the Probe: For this Purpoſe, a Probe of Lead, or the ſofteſt Silver is to be introduced, without any Violence, into the Wound. But 'tis ſufficiently obvious, that a Change of the Situation of the Body, Fat obſtructing the Wound, or a Thrombus, may make a Reſiſtance to the Probe, even tho' the Wound has penetrated into the Cavity of the Thorax.

By the Impoſſibility of procuring a Diſcharge of Air by any Art; Under the Article VULNUS, 'tis ſhewn, that ſo long as the Cavity of the Thorax is cloſe and entire, the Lungs are always exactly contiguous to the Pleura, and that there is no Air lodg'd between them; but when a wounding Inſtrument has penetrated the Pleura, the Air can enter, the Lungs on that Side, collapſe, and the empty Space, form'd by that means, is fill'd by the Air that enters. And this Air, when rarefied by the Heat, will, again, in ſome meaſure, be diſcharg'd thro' the Wound, whilſt freſh Air enters, and thus it goes and returns thro' the Wound; eſpecially, if the Wound of the Pleura is not too large; for, in this Caſe, ſome Dilatation of the Lungs may be ſtill produc'd by the Air, which is convey'd to them thro' the *Glottis*, as is ſhewn under the Article VULNUS. In Wounds of the Thorax, ſkilful Surgeons examine whether the Air is impetuouſly convey'd thro' the Wound, in the following manner: After they have, with their Thumb, or Fingers, ſo compreſſed the Lips of the Wound, that no Air can either get in or out, they order the Patient ſtrongly to *inſpire the Air*, and retain it in the Lungs, by cloſing the Larynx; then, before the Patient performs Expiration, the Surgeon places a ſmall lighted Candle near the Wound, and ſuddenly ſeparates the Lips of the Wound; in which Caſe, if any Air has enter'd the Cavity of the Thorax, it will be impetuouſly diſcharg'd from the Wound, ſo as ſenſibly to act on the Flame of the Candle; for when Air, in conſequence of a Wound of the Pleura, is lodg'd in the Cavity of the Breaſt, when the Wound is cloſ'd, this Air will be rarefied by the Heat of the Body. If at the ſame time, by a ſtrong Inſpiration, the Lungs on that Side can be ſtill but a little dilated, the Air retain'd in the Lungs by cloſing the Glottis, being rarefied, will expand the Lungs: Hence the Air, receiv'd into the Cavity of the Thorax, will be more preſs'd upon; and therefore, upon opening the Wound, be diſcharg'd impetuouſly, and with an hiſſing Noiſe. 'Tis ſufficiently obvious, if the Air is thus diſcharg'd from ſuch a Wound, that it has penetrated into the Cavity of the Thorax: It may, however, happen, that a Perforation of the Thorax is made, and yet no Air enter its Cavities; when, for Inſtance, Fat, eſpecially after a Change of Situation in the Body, immediately fills up the Paſſage made by the wounding Inſtrument; or, when a little Air has enter'd in this manner, it cannot, for the ſame Cauſe, be eaſily diſcharg'd again: And this principally happens, when the Wound is ſmall.

By the Return of any tepid Liquor injected into the Wound: This Method ſeems, of all others, the moſt ſafe and infallible; for a Search made with the Probe may often prove fallacious, ſince ſometimes by a Change of Poſture in the Body, eſpecially in fat Perſons, the cellular Membrane obſtructs the Probe, and hinders it from reaching to the Bottom of the Wound. Sometimes, alſo, the Probe may be introduc'd a great Way, and yet not penetrate into the Cavity of the Thorax; when, for Inſtance, the wounding Inſtrument, by means of the Fat, has paſs'd along the Ribs, as is certain from chirurgical Obſervations. Thus, in fighting a Duel, a certain Student had his Antagoniſt's Sword paſs'd into the Right Side of his Thorax, ſo far that its Point wounded the Left Side, without penetrating into the Cavity of the Breaſt, but only paſſing along the Ribs. Tepid Water is gently to be injected into the Wound, by means of a Syringe; and if a conſiderable Quantity of Water may be thus injected without Reſiſtance, and if there is no Tumor in the adjacent Parts, produc'd by the Water collected in the *Membrana Cellulosa*, we then know, that the Water is convey'd thro' the Wound into the Cavity of the Thorax; but if there is a great Reſiſtance, and the Water immediately returns thro' the Orifice of the Wound, we know, that it has not penetrated into the Cavity of the Thorax. Nor is any Harm to be dreaded from a Conveyance of the tepid Water into the Cavity of the Breaſt; ſince it may be eaſily evacuated again by a proper Poſture of the Body, or other Meaſures, to be afterwards ſpecified. And tho' the Water ſhould even be left in the Cavity of the Breaſt, it will be reſorb'd by the bibulous venous Veſſels, diſtributed thro' all the internal Surface of the Thorax, and the Surface of the Lungs. That Fluids, contain'd in the Cavity of the Thorax, have been frequently diſſipated in this manner, is certain from chirurgical Obſervations. In an Empyema, it has been found, that the Pus has been reſorb'd by Expectoration, Stool, and Urine; and, alſo, that the Pus entering the Veins, and mixing with the Blood; has been, by a Tranſlation, convey'd to various Parts of the Body. *Paré*, in the tenth Chapter of his Works, informs us, that when he injected a bitter Liquor into the Cavity of the Thorax, in order to deterge the Parts from the extravaſated and corrupted Blood, he was ſurpris'd to find his Patient complain of a violent Senſe of Bitterneſs, and an Inclination to vomit; for which Reaſon he afterwards abſtain'd from that Practice.

By placing the Patient in the Poſture he was in when the Wound was receiv'd: Under the Article VULNUS, 'tis obſerv'd,

of how great Importance it is in determining the Nature of Wounds, and forming Prognoſtics of the Misfortunes to be dreaded from them, to know the Poſture of the Body at the time the Wound was received; for it would often be impoſſible to trace the Way of the wounding Inſtrument, unleſs the Patient was put in the ſame Poſture with that he was in when wounded; for the various Actions of the Muſcles may ſurpriſingly change the Situation of the Parts, as *Euſtachius* has beautifully ſhewn in his *Tabulæ Anatomicæ*; for, in the thirtieth Plate of that Work, he repreſents the Right Arm elevated, and the Elbow bended; and the Left Arm ſtretched downwards, with the Elbow unbended; ſo that, upon comparing the Right, with the Left Side of the Thorax, there appears a conſiderable Difference in the Situation of the Parts. And, laſtly,

By the certain Signs of the Adheſion of the Lungs to that Part of the Pleura where the Wound is made: As the Lungs, both in Inſpiration and Expiration, are always contiguous to the Pleura, as is certain from Phyſiology, yet they are naturally free in the Cavity of the Breaſt, adhering only by their Air-veſſels to the Aſpera Arteria, and by their Blood-veſſels to the Heart, but nowhere elſe. The principal Cauſe why theſe Parts do not grow together, ſeems to be, that the ſmall arterial Veſſels of the Lungs and Pleura always exhale a fine ſubtile Dew, which hinders the Adheſion of the Lungs to the Pleura. This is beautifully expreſſed by *Hippocrates*, who, in his Treatiſe *de Arte*, *Cap.* 8. informs us, "that every Part of the human Body, not concrete, or "adhering to another, whether covered with Skin, or whether "its Surface is fleſhy, is filled with Air, if ſound; but with Ichor, "if unſound and infirm." But when, in conſequence of an Inflammation, the large Veſſels are ſo diſtended, as to compreſs theſe ſmall Veſſels to that degree, that they cannot exhale their highly fine and ſubtile Fluid, the dry Surfaces of the Parts pretty ſoon grow together. Hence it is, that after Pleuriſies, Peripneumonies, and Empyemas, the Lungs are ſo often found adhering to the Pleura. If it is, therefore, obvious, that the Patient has formerly been afflicted with theſe Diſorders, the Surgeon is carefully to advert to ſuch a Circumſtance; for, if the Wound is inflicted in the Part where the Lungs adhere to the Pleura, the wounding Inſtrument may penetrate the Subſtance of the Lungs, without entering the Cavity of the Breaſt. This may be known to be the State of the Patient, when Water, injected into the Wound, excites a gentle Cough, and is thrown up through the Aſpera Arteria; for then the Wound has penetrated into the Lungs, but not into the Cavity of the Thorax.

Theſe are the Signs by which Surgeons generally conclude, that Wounds have only injured the external Parts, but not penetrated into the Cavity of the Breaſt. But it may ſometimes happen, that all theſe Circumſtances, tho' ever ſo carefully adverted to, may yet prove fallacious, eſpecially if the Wound is inflicted with a very ſmall Inſtrument; for, in this Caſe, upon withdrawing the Inſtrument, the Fat may ſo obſtruct the Wound, that neither the Air, the Probe, nor warm Water, can enter; and yet the hurt pulmonary Veſſels may diſcharge Blood into the Cavity of the Thorax. Hence the Surgeon is to conſider, whether the Reſpiration is injured; for if the Cavity of the Thorax is leſſened and oppreſſed, either by the Air that enters, or by extravaſated Blood, the Reſpiration will always be difficult; and if this Symptom is obſerved after Wounds of the Breaſt, it always ſeems to indicate, that the Wound, tho' it ſhould appear by no other Signs, has penetrated into the Cavity of the Thorax. Phyſicians, therefore, and Surgeons, ought to take care not to loſe their Reputations, by looking on the ſmalleſt Wounds as inconſiderable, and void of Danger.

If Wounds of the Thorax deſcend obliquely upon or within the Ribs, the Pleura being, by this means, frequently corroded, they depoſite Pus in the Cavity of the Thorax, eſpecially if the Paſſage of the Pus to the external Parts is by any Cauſe obſtructed. In this Caſe an Empyema is formed, and many Misfortunes produced.

Tho' 'tis certain, that a Wound has not penetrated into the Cavities of the Breaſt, yet many terrible Misfortunes may ariſe from it; for if the Condition of a Wound is ſuch, that its Orifice is placed in a ſuperior Part, whilſt, at the ſame time, it deſcends pretty deep among the Muſcles, the extravaſated Humours will be here collected, become acrid by their Stagnation and Continuance, form various Sinuſes, and at laſt, may, in conſequence of a Corroſion of the Pleura, fall into the Cavity of the Breaſt. The collected Pus will daily fall from ſuch a ſinuous Ulcer; the Quantity of Fluids contained in the Cavity of the Thorax will be augmented; an Empyema will be formed; and the Lungs, being macerated in Pus, which daily becomes more acrid, will be conſumed. Hence, a moſt inſupportable Train of Miſeries is ſucceeded by Death. Theſe Misfortunes are moſt dangerous and troubleſome, when ſuch fiſtulous Cavities deſcend behind the Ribs; for then there is ſcarcely any Room left either for Dilatation, or Compreſſion. Beſides, if the bony or cartilaginous Subſtances of the Sternum and Breaſt are injured, many Misfortunes may ariſe from ſuch a Circumſtance; and the Cure will be highly difficult, as is obvious from what is ſaid under the Article Os. *Galen*, in *Treat. de Anatom. Adminiſtr. Lib.* 7. *Cap.* 13. confirms this by a memorable Inſtance. In the *Paleſtra*, a Boy receiving a Blow on the Sternum, was, at firſt, neglected, and afterwards not well cured. Four Months after, Pus appeared in the Part where he received the Blow; a Surgeon made an Inciſion in the Place; and, as he thought, brought it ſoon enough to a Cicatrix. Afterwards, a freſh Inflammation ariſing, a ſecond Inciſion was made, nor could the Wound any more be brought to a Cicatrix. After this, *Galen*, and ſeveral other Phyſicians, being called, found the Bone of the Sternum carious; and when all refuſed to attempt the Cure, *Galen* cut out the corrupted Part of the Sternum, found Part of the ſubjacent Pericardium putrid, and ſaw the naked Heart; and yet the Boy was recovered in a ſhort time. And *Galen* himſelf, in the Beginning of his firſt Book *de Placitis Hippocratis & Platonis*, ſeems to ſpeak of this Caſe, when he tells us, that in a Boy he ſaw the Heart as diſtinctly, as in Animals diſſected for that Purpoſe.; and he adds, that this Boy recovered. But ſuch Misfortunes are moſt of all to be dreaded, when either by the Situation of the Wound, or prepoſterous Meaſures, the Paſſage of the Pus to the external Parts is hindered.

Hence, in the Cure of Wounds of the Thorax, we are to abſtain from all Tents, emplaſtic Subſtances, and Compreſſion; and are, on the contrary, to uſe depurating and ballamic Subſtances, Pledgets, ſlight Bandage, and a proper Poſture of the Body.

Since, in Wounds of the Thorax, ſo many terrible Misfortunes may ariſe from the extravaſated Humours retained in their Cavities, and frequently making new Ways to themſelves through the *Membrana Celluloſa*, 'tis ſufficiently obvious, that a free Diſcharge of them ought to be procured. It was once the Cuſtom of almoſt all Surgeons, to put Tents into moſt Wounds, eſpecially thoſe of the Thorax, in order to prevent the ſudden Conſolidation of the Orifice of the Wound, before its internal Parts are grown together; that there might be a free Diſcharge for the heterogeneous Bodies left in the Wound, and that vulnerary Remedies might have the freer Acceſs to the Bottom of the Wound. *Belloſte*, to whom we owe the beautiful Invention of making ſmall Perforations in the Bones ſtript of their *Perioſteum* mentioned in the Article CAPUT, in his *Hoſpital Surgeon*, oppoſes this Practice; and by ſolid Arguments demonſtrates, that the Uſe of Tents is pernicious, eſpecially in Wounds of the Thorax; and ſhews from Inſtances, that Experience has confirmed the Truth of his Arguments: For Tents, prepared of folded Lint, or any other ſimilar Subſtance, and put into the Orifice of a Wound, become tumid, by abſorbing the extravaſated Humours; and are ſoon expelled, unleſs ſecured by an adheſive Plaiſter, or a Bandage. But if they are ſo ſecured that they cannot be expelled, becoming tumid, they, by a ſlow Dilaceration, dilate the Orifice of the Wound, with great Pain and Irritation of the Parts. At the ſame time, by blocking up the Orifice of the Wound, they hinder the Evacuation of the Pus, and other diſcharged Liquors, which will, therefore, find new Ways for themſelves, and are capable of converting the Wound into a malignant ſinuous Ulcer; or perhaps, when the Pleura is corroded, they may fall into the Cavities of the Thorax, a new Source of terrible Misfortunes. Beſides, every Moment the Capacity of the Thorax is changed, ſince, in the mildeſt Reſpiration, the Ribs, and the Muſcles affix'd to them, move. Hence ſuch a Wound is never at Reſt, and there is a continual Friction of its Lips on the Tent. Hence Pain, Inflammation, and at laſt, a Callofity, is produced in the Lips of the Wound; which Callofity muſt be afterwards remov'd, before a Conſolidation can be obtained. Hence 'tis ſufficiently obvious, that in Wounds of the Thorax, no Good is to be expected from the Uſe of Tents. Perhaps the only Caſe in which they are proper is, when the Orifice of the Wound, being too ſmall, ought to be dilated; though, as is obſerved under the Article VULNUS, this is more eaſily done by the Knife. And if Tents are to be uſed for this Purpoſe, they ought only to be applied for a Day or two, and not thro' the whole Courſe of the Cure. Beſides, as is obſerved under the laſt-mentioned Article, a Tent of Sponge duly prepared, and put into the Orifice of a Wound, is, in a few Hours, capable of making a very conſiderable Dilatation. For the ſame Reaſon 'tis obvious, why the moſt tenacious and adheſive Plaiſters are injurious in Caſes of this Nature, becauſe they hinder the free Diſcharge of the Humours from the Wound. 'Tis, therefore, moſt expedient, in Wounds of the Thorax, to apply plain Pledgets, covered with vulnerary Balſam, or the ſofteſt Digeſtives, according to the Condition of the Wound. Over ſuch Pledgets we are to apply a Plaiſter, which is not very tenacious, and cut into many ſmall Holes; over this we may apply a proper Bandage, if it is thought neceſſary; obſerving this Caution, that by Bolſters, or ſome other Expedient, we hinder the Bandage from compreſſing the Aperture of the Wound, and by that means preventing the Diſcharge of the extravaſated Humours.

Hippocrates, in *Coac. Prænot.* N°. 430. obſerves, "that thoſe "who have the external Part of a Wound of the Thorax cured, "and

" and not its internal Part, are in Danger of having an Empyema " formed; and if a weak Cicatrix is formed in the internal Part, " it is eaſily broken." Hence 'tis obvious, that great Care ought to be taken, that the internal Surface of the Wound ſhould be conſolidated, before its external Orifice is brought to a Cicatrix. Hence ſome may poſſibly conclude, that Tents would be beneficial in hindering the Concretion of the external Orifice of the Wound. But if we conſider, that a Tent ſo blocks up the Wound, that the Pus cannot be diſcharged, it will be obvious, that it hinders the Concretion of the internal Parts of the Wound, ſince the Pus retained in the Wound, prevents the Contact of the Parts which ought to be united, and, being increaſed in Quantity, makes new Ways for itſelf, by which means the Surface of the internal Wound is enlarged. That *Hippocrates* condemned the Uſe of Tents, is certain from another memorable Paſſage of that Author, who, in *Tract. de Morbis, Lib.* 1. *Cap.* 9. tells us, " that in thoſe who have an Empyema formed, by Wounds of " the Thorax, inflicted either by a Spear, Dagger, or Dart, ſo " long as the Matter of the Ulcer is diſcharged externally by " the original Wound, then the Pus is eaſily evacuated; and, if " the internal and external Parts are healed together, the Patient " is reſtored to Health. But if the external Part is healed, but " not the internal, the Patient has an Empyema formed. But " if both the internal and external Parts are healed together, and " the Cicatrix within remains weak, rough, and livid, the Ulcer " ſometimes recurs, and the Patient is ſeized with an Em- " pyema."

From this Paſſage 'tis ſufficiently obvious, that an equable and firm Conſolidation of the internal and external Parts of the Wound ought not to be attempted by Tents; but by ſuch a Poſture of the Body, that the Fluids, contained in the Cavity of the Wound, may, by their own Weight, fall to the external Aperture of the Wound; and when the Bottom of the Wound is lower than its Orifice, and when this Misfortune cannot be corrected by the Poſture of the Patient, then by Compreſſes applied to the Bottom of the Wound, and proper Bandage, the Humours are to be forced to its Orifice; and thus, by expelling the Fluids, the Parts in the Bottom of the Wound, being brought into Contact, eaſily grow together. The Pus, in the mean time, continually diſcharg'd from the Orifice of the Wound, will hinder it from cloſing, before the internal Parts are healed. But if the internal Surface of the Wound, being ſordid, requires Depuration before a Conſolidation can be expected, then the Remedies ſpecified under the Article VULNUS for that Purpoſe, are to be uſed, and their Uſe is to be perſiſted in, till the Pus diſcharged is white, mild, viſcid, ſmooth, equal, and without Smell. Then, by a gentle and gradual Compreſſion from the Bottom to the Orifice of the Wound, its Conſolidation is to be attempted.

That a Wound has penetrated into the Cavity of the Breaſt, may be known, firſt, by comparing the Cauſe with the Largeneſs of the Wound; ſecondly, by means of a Probe, after the Body is reduced to the ſame Poſture in which the Patient received the Wound; thirdly, by a ſtrong Inſpiration of Air into the Lungs, whilſt the Wound is clos'd, upon which, if the Mouth and Noſtrils are ſhut, and the Wound ſuddenly uncovered, the Air in the Cavity of the Breaſt is diſcharged from the Wound, and frequently with a Noiſe; fourthly, by Injection; fifthly, by an Emphyſema, when the Air, contained in the Cavity of the Breaſt, being continually increaſed by the Action of the wounded Lungs, rarefied, compreſſed by Inſpiration, hinder'd from a free Evacuation thro' the Wound, and at the Lips of the Wound forced into the cellular Membrane, occaſions frequently, that the whole Body is raiſed into a livid, ſmooth Tumor, which renders him eleven Inches larger; but this Tumor does not affect the Soles of the Feet, and the Palms of the Hands; ſee *Acad. Reg. Sc.* 1713. *Hiſt.* where we have an Account of a mortal Emphyſema, from a Fracture of the Ribs, without any Injury done to the Skin; and, ſixthly, from a Diſcharge of frothy Blood.

Great Caution is requiſite in determining, whether a Wound has penetrated into the Cavity of the Thorax, or not; for the Cavity of the Thorax, before, aſcends much higher than in the poſterior Parts. Hence ſhameful Errors have happened, when Wounds were thought to penetrate into the Cavity of the Thorax, whilſt they only paſſed into that of the Abdomen. Of this we have a memorable Inſtance in Mr. *Ruyſch's Obſervationum Anatom. Chirurg. Centur. Obſervat.* 65. from which Obſervation, 'tis certain, that the Situation and Diſpoſition of the Diaphragm ought to be duly known, in order to determine, whether a Wound has penetrated into the Cavity of the Thorax, or not.

But Wounds may penetrate into the Cavity of the Thorax, when, being inflicted on the Abdomen, they paſs thro' the Diaphragm; but of this there are no certain Signs, ſince ſuch Misfortunes are generally only diſcovered after the Death of the Patient; Inſtances of this are ſpecified under the Article VULNUS. Or Wounds perforating the Thorax, properly ſo called, paſs into its Cavities: Theſe we are here treating of, and they may be known by the following Signs.

1. *By comparing the Cauſe with the Largeneſs of the Wound:* As almoſt all Inſtruments, with which Wounds are inflicted by Puncture, are of a conical Figure, 'tis ſufficiently obvious, that the Largeneſs of the Wound, compared with the wounding Inſtrument, may inform us how far ſuch an Inſtrument has penetrated. But this Sign may prove fallacious, if the Wound is among the Muſcles upon the Ribs; for in this Caſe a great Part of the Inſtrument may penetrate into the Muſcles, without entering into the Cavity of the Thorax.

2. *By means of a Probe, after the Body is reduced to the Poſture in which the Patient received the Wound:* This Sign we have already conſidered both in this Article, and under the Article VULNUS, where 'tis ſhewn, that, by a Change of Poſture, the Muſcles change their Situation, and the Fat preſſed into the Wound may eaſily obſtruct the Probe.

3. *By a ſtrong Inſpiration of the Air into the Lungs, whilſt the Wound is cloſed:* We have already, in the Beginning of this Article, conſidered this Sign; but in making ſuch a Trial, we are to take care, that the Air do not enter the Cavity of the Thorax; for when the Lips of the Wound are ſeparated, and the Thorax dilated by Inſpiration, the Air may eaſily enter, tho' it had not before found a Paſſage; for in fat Perſons, when a Wound penetrates into the Cavity of the Thorax, the Fat, upon withdrawing the Inſtrument, ſo blocks up the Wound, that the Air cannot enter. Hence, when an Attempt is made this way, the Lips of the Wound are carefully to be compreſſed; then the Patient is to retain the Breath drawn in by a ſtrong Inſpiration; then, cloſing his Mouth and Noſtrils, he is to make a ſtrong Effort of Expiration; then the retained Air, expanded by the Heat, will violently dilate the Lungs. Hence they will compreſs the Air between the Pleura and the Lungs, which is, alſo, rarefied by the Heat of the Place; then, uncovering the Wound, there is no Fear, that the Air will, thro' the external Wound, enter the Cavity of the Thorax, becauſe the diſtended Lungs will be everywhere apply'd to the Pleura, if there is already no Air in the Cavity of the Breaſt: But if any Portion of Air has already entered, this Air, rarefied by the Heat, and preſſed upon by the dilated Lungs, will be more than a Balance for the Preſſure of the external Atmoſphere, and be diſcharged impetuouſly from the Wound. But if the Wound is ſuch, that there is a free Ingreſs of the Air into the Cavity of the Thorax, and is not, at the ſame time, much larger than the Aperture of the Glottis, ſee VULNUS, the Air will go and come thro' the Aperture of the Wound, with a manifeſt Hiſſing.

4. *By Injection:* We have already treated of this Sign.

5. *By an Emphyſema:* Under the Article CAPUT, this ſurpriſing Symptom is ſaid ſometimes to ſucceed Wounds of the Head; but happens far more frequently in Wounds of the Breaſt, which penetrate into the Cavity of the Thorax; in which Caſe the *Emphyſema* may, in a ſhort time, be diffuſed over all the Body; for when Air enters the Cavity of the Thorax through the Wound, and when the external Aperture is clos'd up by adheſive Plaiſters, or Fat, the Air, rarefied by the Heat of the Place, often makes a Way for it ſelf thro' the Membrana Adipoſa. But large Tumors of this Kind are moſt frequently produced, if the Air-veſſels of the Lungs, injured by the Wound, have depoſited the inſpired Air in the Cavities of the Breaſt; for, in this Caſe, the Diſorder is every Moment increaſed. In the Works of *Ambroſe Paré, Lib.* 10. and in the Memoirs of the *Acad. des Sciences*, for the Year 1713. there are Inſtances which ſufficiently confirm, that *Emphyſemas* frequently ſucceed Wounds of the Breaſt, eſpecially if the Wound admits Air into the Cavity of the Thorax, whilſt, at the ſame time, the free Egreſs of the Air is by any means obſtructed. But 'tis certain, from ſuch Obſervations, that the largeſt Tumors of this Kind are formed, if the Lungs, being wounded, convey the inſpired Air into the Cavity of the Breaſt, eſpecially when there is not a great Hæmorrhage; for when there is, the Blood, falling into the Cavity of the Thorax, and filling it, prevents ſuch an Accumulation of Air in the Cavity of the Breaſt, as is ſufficient for inflating the whole Body. Hence, alſo, appears the Reaſon, why, if a Wound of the Thorax is ſuddenly ſucceeded by ſuch an *Emphyſema*, we may juſtly conclude, that it has penetrated into the Cavity of the Thorax. And,

6. *By a Diſcharge of frothy Blood.* This is a certain Sign that the Lungs are wounded; for when the Blood-veſſels of the Lungs are wounded, the Blood, flowing out of them, and mixing with the Air of the Air-veſſels of the Lungs, froths. Hence, in ſuch a Caſe, the Patient either expectorates a frothy Blood through the Aſpera Arteria, or ſuch a Blood is copiouſly diſcharged. But the Lungs cannot be hurt, unleſs the wounding Inſtrument has penetrated into the Cavity of the Thorax, except the Lungs adhere to the Pleura in that Part where the Wound is inflicted, as is already obſerved. *Virgil*, in his *Æneid. Lib.* 9. has beautifully painted this Caſe, when he deſcribes *Antiphates* as wounded by *Turnus*.

——— volat Itala Cornus
Aera per tenerum, Stomachoque infixa ſub altum
Pectus abit: reddit Specus atri Vulneris Undam
Spumantem, & fixo ferrum in Pulmone tepeſcit.

For the ſame Reaſon, if in any Diſorder a frothy Blood is expectorated, we conclude that it comes from the Lungs.

The Effects of ſuch Wounds are frequently, firſt, a Preſſure of the Air, which has entered upon the Lungs, which are, by that means, rendered unfit for carrying on Reſpiration, and the Circulation of the Blood; ſecondly, an Effuſion and Accumulation of Blood in the Thorax; thirdly, a Putrefaction of the extravaſated, heated, moved, and every way pent up Blood; fourthly, hence a Maceration, Corroſion, Corruption, and *Fœtor* of the Pleura, Lungs, Mediaſtinum, Diaphragm, and Pericardium; fifthly, an infinite Number of Diſeaſes ariſing from theſe Circumſtances; and, ſixthly, a Spitting of Blood.

In this Paragraph are enumerated the Misfortunes, ſometimes, obſerved to ſucceed Wounds penetrating the Cavity of the Thorax; all which principally depend either on the Admiſſion of the Air, or an Extravaſation of the Humours.

1. *As for the Preſſure of the Air, which has entered upon the Lungs*, under the Article VULNUS, 'tis ſhewn, that, in a ſound Perſon, there is naturally no Air between the Lungs, and Pleura; and that this Circumſtance *was requiſite, that the Lungs* when the Breaſt is dilated, might be diſtended by the Air, which enters by the Glottis. Hence, as ſoon as, by a Wound of the Thorax, the Air is admitted into the Cavity of the Breaſt, the free Expanſion of the Lungs is hindered, and, in large Wounds, totally deſtroy'd. Under the laſt-quoted Article, 'tis, alſo, ſhewn how far, and under what Limitation, this is true; for if the Air can enter very freely into the Wound, the Lungs cannot be dilated at all. If thro' a ſmaller Wound, a leſs Quantity of Air enters, than that convey'd thro' the Aperture of the Glottis, there will be ſome Expanſion of the Lungs, tho' not ſo great as in a natural State. *Galen*, in his Treatiſe *de Anatom. Adminiſtrat. Lib* 8. *Cap.* 3. has beautifully expreſſed this in the following manner: "Now it is evident, that, in Inſpiration by the Mouth of an "Animal, ſo much is defeated or loſt, by means of the Wound, "as is equal to the Quantity of the circumambient Air, which "flows into the Thorax thro' the Wound, inſtead of Inſpiration "by the Mouth; and that the leſs is drawn in by Inſpiration, the "leſs muſt, alſo, be diſcharged in Expiration; and the more the Ex-"piration is decreaſed, the ſhorter the Voice muſt of courſe be." If the Air, convey'd into the Cavity of the Breaſt, cannot again, by whatever Cauſe, be diſcharged, thro' the Wound, this Air, being rarefied by the Heat, will be expanded, and, by ſtrongly compreſſing the Lungs, hinder Inſpiration, and the Dilatation of the Lungs by that means; which, after we are brought into the World, is requiſite, that the Blood expelled from the Right Ventricle of the Heart, may paſs freely thro' the narroweſt Parts of the pulmonary Artery. The Reaſon of all theſe Circumſtances is eaſily deduced from a Knowledge of the Properties of the Air, and thoſe Things which in Phyſiology are ſhewn to be neceſſary to Reſpiration, and a free Circulation of the Blood thro' the Veſſels of the Lungs.

2. *As for the Effuſion and Accumulation of Blood in the Thorax*; if, for Inſtance, the intercoſtal Arteries are injur'd, a large Quantity of Blood may be collected in the Thorax; for the adjacent Heart, with great Force, throws the Blood into theſe Arteries. The Motion of the Thorax, in Reſpiration, hinders theſe wounded Arteries from remaining in a State of Reſt, and being ſoon contracted. Now, if the Blood-veſſels of the Lungs ſhould be cut, 'tis ſufficiently obvious, that a large Quantity of Blood muſt ſuddenly be accumulated; but if the large Blood-veſſels, running from the Heart, ſhould be wounded, Death would ſoon enſue. The Blood thus poured out from the Veſſels, unleſs diſcharged thro' the external Aperture of the Wound, will be collected in the Cavity of the Thorax, and hinder the free Dilatation of the Lungs. Hence a violent Uneaſineſs and Impediment of Reſpiration will be produced.

3. *As for the Putrefaction of the extravaſated Blood*; the Blood, thus extravaſated, is lodged in a Part which is warm, moiſt, and continually moved by Reſpiration. Hence it muſt eaſily degenerate into a putrid Corruption; eſpecially ſince, thro' Wounds penetrating into the Cavity of the Thorax, the Air almoſt continually enters; as, alſo, if the Air-veſſels of the Lungs, being wounded, convey the inſpired Air into the Cavity of the Breaſt, Chirurgical Obſervations ſufficiently evince, that ſuch extravaſated Blood ſoon becomes putrid. Thus *Hippocrates*, in his Treatiſe *de Morbis, Cap.* 2. informs us, "that Blood, flowing from a "Wound or Vein into the Thorax, muſt neceſſarily become "corrupted."

4. *As for the Maceration of the Pleura, Lungs, Mediaſtinum, and Diaphragm*; the ſudden Corruption of the extravaſated Blood will every Moment be increaſed; for in theſe Parts there is a violent Heat, on account of the Vicinity of the vital Viſcera: Hence the Blood will be changed into an highly putrid Ichor. The Lungs ſituated in this gangrenous corrupted Liquor will be macerated, and rendered putrid: So, alſo, will the Pericardium, Pleura, and other Parts mentioned. 'Tis ſhewn, in the preceding Paragraph, that Blood thus extravaſated may be ſoon corrupted; and 'tis certain from Experience, that it is capable of acquiring the greateſt Degree of Corruption. Inſtances confirming this are found in *Sculter. Armament. Chirurg. Obſerv.* 43. *ibid. Obſ.* 50. and in *Hildan Obſervat. Chirurg. Centur.* 2. *Obſerv.* 27.

As for the infinite Number of Diſorders ariſing from theſe Circumſtances; the extravaſated Humours may, by compreſſing, or, if they have acquired a putrid Acrimony, by corroding, diſturb, or even aboliſh, all the Functions of the Viſcera ſituated here. Hence may ariſe violent Dyſpnœas, exceſſive Palpitations of the Heart, intolerable Anxieties, Inflammations, Exulcerations, and Gangrenes of theſe Parts. The extravaſated Blood, alſo, by the Heat and Length of Time becoming putrid and attenuated, may be reſorbed by the bibulous Veins on the Surface of theſe Parts, mixed with the Blood, and induce a malignant Cacochymy. Hence ariſe acute putrid Fevers, ſurpriſing Tranſlations of the putrid Matter to other Parts of the Body, a Phthiſis, an Atrophy, and Death. Hence we juſtly conclude, that numberleſs Diſeaſes, even of the worſt Kind, may ariſe from an Extravaſation of the Humours in the Cavity of the Thorax.

As for a Spitting of Blood; if, immediately after the Infliction of the Wound, Blood is ſpit, 'tis a Sign, that the Lungs are wounded, eſpecially if the Blood is frothy. Hence, if the Veſſels of the Lungs are wounded, the Blood may fall down into the Cavity of the Breaſt, unleſs the Lungs adhere to the Pleura in that Part where the Wound was inflicted. If, a few Days after the Infliction of the Wound, a bloody Matter is expectorated, this may happen, becauſe the extravaſated Blood, being, by the Heat and Length of Time attenuated, may be reſorbed by the Veſſels of the Lungs. How this happens, we ſhall not pretend to determine: 'Tis, however, certain, that an Empyema has been cured by an Expectoration of purulent Spit. In a true Pleuriſy, yellow Spit, mixed with bloody Streaks, has been often obſerved to remove the Diſorder, as is certain from practical Obſervations. Hence 'tis obvious, that Blood extravaſated in the Cavity of the Thorax may produce a Spitting of Blood.

The Signs of Blood extravaſated in the Cavity of the Thorax are, firſt, an Orthopnœa; ſecondly, the Patient's lying moſt commodiouſly on his Back, with Difficulty on the wounded Side, and the abſolute Impoſſibility of his lying on the ſound Side; thirdly, the Conſequences already ſaid to attend ſuch a Wound; fourthly, a Weight in the Septum; fifthly, the Fluctuation of Matter; ſixthly, the Nature and Situation of the Wound inflicted; ſeventhly, the great Weakneſs of the Patient, accompanied with Paleneſs, and a cold Sweat; and, eighthly, the continual Increaſe of almoſt all the Symptoms.

After it is determined, that a Wound has penetrated into the Cavity of the Thorax, it is next, with equal Care and Accuracy, to be examined, whether, in conſequence of an Aperture of the Veſſels, there is not a conſiderable Quantity of extravaſated Blood, lodged in the Cavity of the Thorax. Nor is it always eaſy to determine this, ſince many of the Signs, to be afterwards ſpecified, may prove fallacious: Hence a Concurrence of many of them is requiſite to eſtabliſh any thing certain in this Caſe. But that much Harm may be done by the Phyſician's or Surgeon's Error, in the Diagnoſtic, is ſufficiently obvious, ſince the extravaſated Blood ought to be evacuated either by the Wound already made, or by making a new Aperture. But if this is attempted, when there is no Blood in the Cavity of the Breaſt, the Air, which, in this Caſe, is always injurious, is admitted, and the Wound is irritated. Hence all Circumſtances ought to be carefully adverted to, leſt the Patient ſhould be expoſed to unneceſſary Pain, and the Reputation of the Phyſician endangered.

As for an Orthopnœa, this is a difficult and ſhorting Reſpiration, which can only be performed with the Neck and Thorax in an erect Poſture; and which always denotes, that the free Expanſion of the Lungs, by the inſpired Air, is hindered, by whatever Cauſe this happens. But as the Blood, extravaſated in the Cavity of the Thorax, poſſeſſes that Space which the dilated Lungs ought to fill, 'tis ſufficiently obvious, that a difficult Reſpiration muſt ariſe from ſuch a Circumſtance. But when the Patient remains in an erect Poſture, the Diaphragm is, by the Weight of the extravaſated Blood, depreſſed, and the Cavity of the Thorax by that means enlarged. Hence at that time there may happen ſome Expanſion of the Lungs, at leaſt a greater than in any other Poſture of the Body. But this Sign, conſidered by itſelf, may prove fallacious; for the Air entering the Cavity of the Breaſt, and hindering the free Expanſion of the Lungs, may produce an Orthopnœa. A ſpaſmodic Conſtriction of the Lungs in aſthmatic Patients, alſo, produces the ſame Diſorder.

2. *As for the Patient's lying moſt commodiouſly on his Back*; this Sign is of great Importance; for the Diaphragm, deſcending very far towards the poſterior Parts of the Body, greatly increaſes the Capacity of the Thorax. Hence the Blood extravaſated in the Cavity of the Thorax, when the Patient lies on his Back, ſpontaneouſly falls to the inferior and poſterior Parts of the Thorax, and that Part of the Diaphragm is more eaſily preſſed downwards, for the middle and tendinous Part of the Diaphragm, to which the Pericardium adheres by a broad Baſis, cannot be eaſily depreſſed, as is obſerved under the Article VULNUS.

Hence 'tis obvious, that, in this Poſture, the extravaſated Blood is moſt commodiouſly diſpoſed of. Whilſt the Patient lies on the wounded Side, that Poſture is more uneaſy, tho' ſtill tolerable; but if he lies on the ſound Side, the extravaſated Blood will preſs the Mediaſtinum and Pericardium towards the other Cavity of the Breaſt: Hence its Capacity will be diminiſhed, and the Difficulty of Reſpiration increaſed, which when the Patient perceives, he is forced to change the Poſture of his Body, for fear of a Suffocation.

2. *As for the Conſequences already deſcribed in the preceding Paragraph*; theſe principally depend on the Corruption of the extravaſated Blood, and the Taint communicated to the Viſcera, by ſuch a putrid Gore. Hence, by the Signs, the Preſſure of extravaſated Blood is known, but often too late.

4. *As for the Weight perceived in the Diaphragm*; when the Patient is in an erect Poſture, the extravaſated Blood, by its Weight, preſſes the Diaphragm downwards. Hence a Senſe of the incumbent Weight is perceived, and a Pain produced about thoſe Parts to which the Diaphragm adheres. In conſequence of the Depreſſion of the Diaphragm, there, alſo, appears a Tumor of the Abdomen on the Side affected. Hence in an Empyema, ſometimes the Diaphragm depreſſed, and gradually moved, and more diſtended by the collected Pus, renders the Abdomen ſo protuberant, that the Diſorder reſembles that Species of Dropſy, called *Aſcites*.

5. *As for the Fluctuation of the peccant Matter*; when there is a Suſpicion, that Pus is lodged in the Cavities of the Breaſt, *Hippocrates*, in his Treatiſe *de Morbis*, *Lib.* 2. *Cap.* 6. orders the Patient to be waſhed with a large Quantity of warm Water, and placed in a firm Chair; then, whilſt an Aſſiſtant holds his Hands, and ſhakes the Trunk of his Body, the Phyſician is to liſten on what Side the Noiſe is to be heard. In the ſame Part, *Cap* 24. he preſcribes the ſame Method, in order to diſcover a latent Dropſy of the Breaſt, and determine the particular Part, by opening which, the Serum accumulated in the Breaſt may be evacuated. But it is ſufficiently apparent, that this Sign may, ſometimes, prove fallacious, when extravaſated Blood is collected in the Cavity of the Breaſt; for this Blood, by Stagnation, becomes grumous, in conſequence of which its Fluctuation is, with Difficulty, perceived. Beſides, if the Breaſt is full of Blood, no Sound, in conſequence of the Plenitude, can be heard, upon ſhaking the Thorax. Hence, in *Coac. Prænot.* N° 432. he gives the following excellent Caution: "Thoſe Perſons labouring "under an Empyema, in whom, upon ſhaking the Shoulders, a "great Noiſe is heard, contain a ſmaller Quantity of Pus, than "thoſe in whom, when afflicted with a greater Difficulty of "Breathing, tho' their Colour is better, only a ſmall Noiſe is per-"ceived. But thoſe in whom no Noiſe is perceived, whilſt there "is a violent Difficulty of Breathing, and a livid State of the Nails, "are full of Pus, and conſequently in a dangerous Condition."

6. *As for the Nature and Situation of the inflicted Wound*; when, from Anatomy, we know the Place of the Wound, and the Direction of the wounding Inſtrument thro' the Parts, it is eaſy to determine, whether large Arteries or Veins are wounded or not. Thus the large Trunks of the intercoſtal Arteries run near the inferior Margin of the Ribs. The internal mammary Arteries are placed behind the Cartilages of the Ribs, on each Side of the Sternum, about a Finger's-breadth from that Bone; and the large Vein, diſtinguiſhed by the Name *Azygos*, is ſituated on the Right Side of the Vertebræ of the Back: And from a due Acquaintance with this Diſpoſition of the Parts, the greater or ſmaller Danger of the Wound is determined.

7. *As for the Weakneſs of the Patient, accompanied with Paleneſs, and a cold Sweat*; ſome Perſons are ſo timorous and faint-hearted, as to fall into a Deliquium, upon ſeeing the Wound of another; and ſuch Perſons, even when wounded very gently, are eaſily ſeized with all theſe Symptoms. But they are ſoon reſtored by ſprinkling cold Water upon them, or by exhibiting a ſtimulating Cardiac. Nor does the Weakneſs, ariſing from this Cauſe, continue long. But when, after a Wound penetrating into the Cavity of the Thorax, there is a great Weakneſs, a Paleneſs and Contraction of the Face, a Paleneſs and Languor of the Eyes, a cold Sweat, appearing in Drops, eſpecially on the Face and Breaſt, and a hardly perceptible Pulſe, we then know that, from the wounded Veſſels, ſo large a Quantity of Blood is diſcharged, that hardly any returns to the Heart, but almoſt the Whole is diſcharged from the Body, or lodged in the Cavities of the Breaſt. In this Caſe, the Danger is very great. Thus *Hippocrates*, in *Prorrhet. Lib.* 1. N° 130. tells us, "that Wounds of the Tho-"rax diſcharging Blood, and accompanied with Sweats, are of "the worſt Kind, ſince ſuch Patients unexpectedly die, whilſt "ſpeaking." In *Coac. Prænot.* N° 328. he affirms the ſame thing; in which Paſſage, inſtead of ἱδρῶτα, the Word ἐπιῤῥῑ-γὸτα occurs. In his *Prorrhet.* alſo, *Lib* 1. N° 153. he informs us, that Rigors ſucceed large Hæmorrhages, and affirms, that the Rigor ſtops the Effuſion of the Blood. But from what has been ſaid, 'tis obvious, that in this Paſſage, he only treats of Hæmorrhages from the Noſe. But when, in Wounds of the Thorax, the large Veſſels, ſo contiguous to the Heart, are wounded, 'tis ſufficiently obvious, that a Rigor may ſucceed a large Hæmorrhage, tho' the Effuſion of the Blood cannot, in ſuch a Caſe, be ſtopt by its means.

8. *As for the perpetual Increaſe of almoſt all the Symptoms*; in the Thorax are very large Blood-veſſels, and thoſe very contiguous to the Heart. Hence, if theſe Veſſels are wounded, the Blood will be diſcharged into the Cavities of the Thorax. Hence the Compreſſion of the Lungs, the Anxiety and Dyſpnœa, will be continually increaſed, till, in conſequence of a Diminution of the Patient's Strength, or a Contraction of the wounded Veſſels, the Effuſion of Blood ceaſes. Many Symptoms may, in ſuch Caſes be, alſo, produced by concomitant Dread or Anger, which, however, are gradually leſſened; but the the Symptoms ariſing from the Effuſion of Blood will continue as long as the Hæmorrhage laſts; for which Reaſon, the perpetual Increaſe of the Symptoms is juſtly reckoned among the Signs, by which it is known, that there is an Effuſion of Blood into the Cavities of the Thorax. But when the Signs evince, that the Wound has penetrated into the larger Cavities of the Body, and it is to be dreaded, leſt the wounded Veſſels ſhould diſcharge large Quantities of Blood internally, tho' there ſhould be no Hæmorrhage externally, great Caution is neceſſary in making a Prognoſtic, leſt the Reputation of the Surgeon or Phyſician ſhould be riſqued in pronouncing, that nothing was to be feared; for often ſuch Patients die unexpectedly, and their Deaths will, by ſuch as defend the Cauſe of him who inflicted the Wound, be imputed to their Ignorance. With how great Accuracy all Phenomena ought to be adverted to in order to determine, whether extravaſated Blood is lodged in the Cavities of the Breaſt, is obvious from this, that the moſt skilful Surgeons have ſometimes been deceived. Thus Mr. *Mery*, in the Memoirs *de l'Acad des Scien.* for the Year 1713. ingenuouſly confeſſes, that he was deceived in a Caſe of this Nature; ſince, in a young Man wounded with a Sword in the ſuperior and anterior Part of the Right Arm, three Hours after the Infliction of the Wound, he ſaw ſo many, and ſo violent Symptoms, that he concluded the Cavity of the Thorax filled with extravaſated Blood, and reſolved to perform the Operation for the *Empyema*. But the Event ſhew'd, that he was miſtaken, ſince in eight Days time the Wound was perfectly healed. 'Tis highly probable, that in this Patient a Wound in the Tendon of the pectoral Muſcle produced the intenſe Pain, and the Difficulty of Reſpiration.

Blood extravaſated in the Cavities of the Thorax is with all Expedition to be evacuated; firſt, by a proper Situation, Motion, and Effort of the Body; ſecondly, by Suction thro' a flexible Tube, perforated on the Sides, and blunt at the End; thirdly, by an Injection of diluting, reſolvent, and depurating Liquors; fourthly, by a Dilatation of the Wound; and, fifthly, by another Aperture between the ſecond and third of the inferior true Ribs, about four Fingers-breadths from the Vertebræ, and the inferior Angle of the Omoplata, made by a cutting Inſtrument, and making the Inciſion parallel to the Ribs in the middle Space between them, and directing the Edge downwards.

After 'tis certain from the Signs ſpecified in the preceding Paragraph, that extravaſated Blood is lodged in the Cavity of the Thorax, the great Intention of Cure is, with all Expedition, to eliminate it, leſt it ſhould prove injurious by its Corruption, or a Compreſſion of the Parts. But 'tis to be obſerved, that this Evacuation of the Blood is not to be made, till 'tis certain, that the wounded Veſſels diſcharge no more Blood; for it would be of no Importance to evacuate the Blood, if the as yet open Mouths of the wounded Veſſels are ſo irritated by the Motion of the Body, the Suction and the Injection, as ſtill to diſcharge Blood. But when the Pulſe is pretty ſtrong and equable, the Extremities of the Body warm, the Patient afflicted with no Cough nor Spaſms; and if he enjoys a conſiderable Degree of Strength, we know, that the internal Spaſm has ceaſed, and that the Meaſures for the Evacuation of the Blood lodged in the Cavity of the Thorax may be ſafely taken.

'Tis, alſo, to be doubted, whether the extravaſated Blood ought always to be evacuated by Art; ſince, 'tis certain from Obſervation, that Blood, Pus, and Water, have been gradually removed from the Cavity of the Thorax, being reſorb'd by the Veins, and afterwards eliminated by Sweat, Urine, and other Methods. Inſtances of this are found in *Fabricius ab Aquapendente*, *Opera Chirurg. Part.* 1. *Lib.* 2. *Cap.* 22. and in *Belloſte's Hoſpital Surgeon*. 'Tis, alſo, certain from Experience, that in ſuch Caſes, copious Diſcharges of Urine, and profuſe Sweats, have proved highly beneficial. Various Obſervations, of this Kind, occur in practical Authors, but theſe are ſufficient to prove, that Nature, which is often ſufficient for anſwering her own Ends, has, in very ſurpriſing Manners, cured ſuch Wounds. But lucky Accidents of this Kind rarely happen; and the Phyſician ought carefully to obſerve whether he diſcovers any ſuch Efforts of Nature: However, if this Work was always left to Nature alone, 'tis certain that many would die, in conſequence of the corrupted and extravaſated Blood, preying upon the vital Viſcera, who might otherwiſe have been preſerved, if that Blood had been evacuated. Now this Evacuation is to be attempted by the following Means.

1. *By the Poſture, Motion, and Effort of the Body:* If the Blood, in the Cavity of the Thorax, is as yet fluid, and the Wound, being pretty large, does not run obliquely through the Integuments, but penetrates directly, the Blood will be ſpontaneouſly diſcharged, if the Patient is put in ſuch a Poſture, as that the Blood may, by its Weight, fall down to the Aperture of the Wound. Hence, in ſuch Caſes, the moſt skilful Surgeons, for ſome Hours, apply nothing at all to the Orifice of the Wound, that, thus the Blood may be freely diſcharged. *Dionis*, in his *Operations de Chirurgie*, informs us, that, he treated, in this manner, a Man, who, with a Sword, received a Wound under his left Pap, which penetrated into the Cavity of the Thorax; for, when he found the Cavity of the Breaſt full of Blood, after dilating the Orifice of the Wound, he ordered the Patient to lie upon it all Night, and next Morning found the Cavity of the Thorax entirely empty, after which the Cure ſucceeded very happily. *Ambroſe Parè*, in Book 10. informs us, that he ordered a Man wounded in the ſame manner, to be placed with his Feet high, and his Head low; after which paſſing his Fingers into the Orifice of the Wound, and removing a Thrombus of coagulated Blood, he evacuated the extravaſated Blood, and preſerved the Patient from imminent Suffocation.

But this Evacuation of the extravaſated Blood, through the Orifice of the Wound, is much aſſiſted, if by a broad Bandage, or the Application of the Hands, the Abdomen is compreſs'd, if the Patient long retains the incloſed Air, and cloſing the Glottis makes a ſtrong Effort of Expiration, for thus the Lungs being greatly dilated, and the Diaphragm preſſed upwards, the Blood contained in the Cavity of the Thorax, is expreſſed through the Aperture of the Wound.

2. *By Suction through a flexible Tube*; As it is often incommodious, in many Wounds of the Thorax, to retain the Patient in ſuch a Situation, that the extravaſated Blood may, by its Weight, be diſcharged through the Aperture of the Wound, Surgeons have invented another Method: Thus *Scultetus, in Armament. Chirug. Tab.* 12. *Fig.* 9, and 10, has exhibited a flexile Tube of Gold, perforated on the Sides, and its Cavity filled with a golden Probe, that it might be commodiouſly introduced without an Anguſtation, or Leſſening of its Diameter. This Tube is to be cautiouſly introduced, as far as poſſible, into the Cavity of the Thorax, and then withdrawing the Probe, the extravaſated Blood is to be extracted, either by Suction of the Mouth, or the Application of a Syringe. The Point of the Pipe muſt be obtuſe, leſt it ſhould injure the Lungs. Pipes, for this Purpoſe, may, alſo, be prepared of Lead, or flexible Leather, and a Whalebone Probe. *Scultetus*, in the ſame Work, *Obſ.* 42, informs us, that by ſuch an Inſtrument, bended into an Angle, after extracting the Probe, he without any Suction, evacuated a large Quantity of Blood from the Cavity of the Thorax.

3. *By the Injection of diluting, reſolvent, and depurating Liquors.* 'Tis ſufficiently obvious, that the two preceding Methods can only be uſed, where the extravaſated Blood is as yet fluid; but, if it is formed into grumous Concretions, it cannot eaſily be diſcharged from the Wound, much leſs enter the Perforations of the Pipe introduced. 'Tis true, indeed, the coagulated Blood is afterwards ſpontaneouſly diſſolved, but, at the ſame time, it becomes putrid; a Circumſtance, which in this Caſe, would be highly injurious; and often on account of the Compreſſion of the Lungs, there is ſo great an Anxiety, that this ſpontaneous Reſolution of the concreted Blood could not be waited for. In ſuch a Caſe, they inject tepid Water with Honey, and the Addition of a little Salt and Venice Soap. For this Purpoſe,

Take of common Honey, two Ounces; of Venice Soap, two Drams; of Sea-ſalt, four Drams; and of Rain-Water, twelve Ounces; mix all together.

Or,

Take of Sal Ammoniac and Nitre, each three Drams; of the recent Urine of a ſound Perſon, twelve Ounces; and of common Honey, two Ounces; mix all together.

Or,

Take of Aloes, diſſolved in Water, duly depurated from its reſinous Faeces, and, again gently inſpiſſated, four Drams; of Sal Ammoniac, two Drams; of Borax, two Drams; of pure Honey, two Ounces; of Rain-water, nine Ounces; and of French White-wine, two Ounces; Mix altogether.

Theſe Liquors, when injected, are by the Motion of Reſpiration agitated, and, as it were, triturated with the grumous Concretions, which are thus ſo reſolved, that they may be diſcharged, through the Aperture of the Wound, together with the injected Liquor. According to various Intentions, the Liquor to be injected may be prepared of different Ingredients: For the Dilution and Reſolution of the concreted Blood, tepid Water, with Honey, and a little Salt, is ſufficient; but when the extravaſated Blood, begins to become putrid, it is moſt expedient to inject Infuſions of Sordium, Rue, Horehound and other ſimilar antiſeptic and gently detergent Subſtances, with the Addition of a little Vinegar.

4. *By the Dilatation of the Wound.* This Method is treated of under the Article VULNUS.

5. *By another Aperture made in the Manner directed.* When the State and Condition of the Wound is ſuch, that the Matter collected, in the Cavity of the Thorax, cannot be evacuated, then, the only Meaſure to be taken, is to make a new Inciſion in a Part of the Thorax, to which, in conſequence of its natural Figure, the contained Fluids may naturally fall. This is principally requiſite, when the Wound is inflicted in the ſuperior Part of the Thorax; for in this Caſe, 'tis hardly poſſible, that the extravaſated Blood ſhould be diſcharged through the Aperture of the Wound. But, as the Cavity of the Thorax, in the poſterior Parts, deſcends very deep, in conſequence of the Situation of the Diaphragm; hence, it is, that in ſuch a low Place, the Cavity of the Thorax may be penetrated, without any Wound in the Diaphragm, which adheres to the inferior Ribs; and from the poſterior Part of the Thorax, aſcending towards the anterior Parts, is formed a pretty acute Angle, with the Bodies of the Vertebræ. But leſt the ſtrong Muſcles, called the Sacrolumbalis, and the Longiſſimus Dorſi, which being placed at each Side of the Spine of the Back, and aſcending through the Loins and Back, ſhould be wounded, this Aperture of the Thorax ought at leaſt to be three Fingers Breadths from the Vertebræ. This Aperture is generally made between the ſecond and third, or the third and fourth of the inferior ſpurious Ribs. But, ſince, according to *Albinus*, in *Hiſtor. Muſculorum Hominis, Lib.* 3. *Cap.* 81. the Diaphragm on the Right Side, aſcends higher into the Thorax than on the Left; hence, when the Operation of the Paracenteſis, in the Thorax, is performed in the Right Side, the Inciſion is generally made between the third and fourth Rib; but on the Left Side, between the ſecond and third of the ſpurious Ribs; as *Van Solingen*, in his *Manuale Operat. Cap.* 1. adviſes. Perhaps, for this Reaſon, *Hippocrates*, when inquiring on what Side the Operation for the *Empyema* ought to be perform'd, wiſhed that the Pus was contained in the Left, as he informs us, in his Treatiſe *de Morbis, L.* 2. *C.* 16. *Dionis*, alſo, in his *Cours d'Operation de Chirurg.* ordered this Operation to be performed between the third and fourth Rib: hence there ſeems to be an Error in the Text of *Boerhaave* in this Place, ſince the Operation is ordered to be perform'd between the ſecond and third of the true Ribs, becauſe afterwards the Operation is order'd to be performed far lower; and becauſe under the Article *Empyema*, where the Perforation of the Thorax is treated of, the Part ſpecified, is between the fifth and ſixth, or fifth and fourth of the inferior Ribs; which Place, according to *Paulus Ægineta, Lib.* 6. *Cap.* 44. is by ſome open'd for the Cure of an Empyema, tho', as he tells us, the Operation is ſucceeded by ſudden Death, or, incurable Fiſtulas: Hence I am of Opinion, that the Words of the Text ought to be *between the ſecond and third of the inferior ſpurious Ribs*, unleſs in this Paſſage we were to ſuppoſe, that the Perforation was to be made in the anterior Part of the Thorax; in which Caſe the Operation is beſt perform'd between the ſecond and third of the inferior true Ribs, as *Dionis*, alſo, informs us, in his *Cours d'Operations de Chirurgie*, where he only mentions this Advantage, as attending the Operation perform'd in this Place, that the Patient can in the Surgeon's Abſence take care of his own Wound. But the greater Deepneſs of the poſterior Parts of the Thorax, and the ſpontaneous Tendency of the extravaſated Blood to the Aperture of the Wound, whilſt the Patient lies, readily convince any thinking Perſon, that a Perforation of the Thorax in the poſterior and inferior Parts is preferable. Tho' *Hippocrates*, in his Treatiſe *de Morbis, Lib.* 2. *Cap.* 16. when treating of the Cure of an Empyema, does not exactly ſpecify the Part to be open'd; yet he determines, that the Operation ought to be perform'd in the poſterior and inferior Parts; for, ſays he, "if, on account of the Thickneſs and "Redundance of the Pus, there is no Noiſe perceiv'd, as it "ſometimes happens, which ever of the Sides is tumid and "painful, is to be open'd in the loweſt Part between the Ribs, "rather on the poſterior, than the anterior Part of the Tu-"mor, that a more eaſy Diſcharge of the Pus may be procur'd." And, in the ſame Work, *Lib.* 3. *Cap. penult.* when treating of the ſame Diſeaſe, he tells us, "that we muſt make an Inciſion "or cauterize the Patient, as near the Septum as poſſible, taking "care however not to wound it."

When, in a Dropſy of the Breaſt, the Waters are to be evacuated, *Hippocrates*, in his Treatiſe *de intern. Affection. Cap.* 24. orders an Inciſion to be made in the Integuments lying above the third inferior Rib, which is then to be perforated with an acute Perforator, and a ſmall Quantity of Water is to be evacuated: From which Paſſage 'tis ſufficiently obvious, that *Hippocrates* made Choice of the loweſt Part of the Thorax, as the moſt proper for an Evacuation of any Liquids contain'd in it.

The Place moſt proper for this Purpoſe is eaſily found by numbering the Ribs, when the Patient is naked; but 'tis not to be found without ſome Difficulty in fat Perſons, and thoſe labouring under an Emphyſema; for which Reaſon Surgeons have fallen upon another Method of determining the Part. Thus *van Solingen*, in his *Manuele Operation, Cap.* 1. orders a Thread to

be

he convey'd from the Cartilago Enſiformis to the Spine of the Back; then he divides thi Thread into three equal Parts, and determines the Part for the Operation to be two Thirds of the Length of the Thread from the Sternum. *Dionis*, in his *Cours d'Operations de Chirurgie*, *Demonſtrat.* 5. orders us to meaſure four Fingers-breadth from the lower Angle of the Omopiata, and the like Diſtance from the Spine of the Back, in order to find the proper Place for the Inciſion. But as the Scapula is moveable, and may change its Situation by the various Actions of the Muſcles adhering to it, 'tis ſufficiently obvious, that this Method is not always very certain. Hence 'tis more proper, when the Place is found, to examine with the Fingers, whether it correſponds to the Interſtice of the Ribs.

The proper Place for the Inciſion, when found, is generally mark'd with Ink, that it may not afterwards be miſtaken: But as the Ribs are moveable, 'tis ſufficiently obvious, that, by a Change of Poſture in the Body, the Situation of the Skin may be, alſo, alter'd. Hence *Hippocrates*, in his Treatiſe *de Morbis*, *Lib.* 3. *Cap. penult.* juſtly adviſes, "that, after the Part is "mark'd, we are to take care, that in cauterizing, or making "the Inciſion, the Figure of the Skin does not deceive us by a "Change of its Situation, either upwards or downwards." The Aperture ought to be made with a cutting, but not with a pungent Inſtrument, as in the Paracenteſis of the Abdomen, which is perform'd by a Steel Trocar, introduc'd into a Silver Canula; becauſe by this Method there would be great Danger of wounding the Lungs. But that the cutting Inſtrument may penetrate the Cavity of the Thorax, the Skin, the Panniculus Adipoſus, the Longiſſimus Dorſi, the intercoſtal Muſcles, and the Pleura muſt be cut; and, that this may be done ſafely, the Patient's Body is to be a little reclin'd towards the poſterior Parts, that the Skin may be looſe. Then the Surgeon is with his Fingers to elevate all the common Integuments, and, if poſſible, along with them, the Latiſſimus Dorſi; and make an Inciſion in them about three or four Fingers-breadth long. After this let the Body of the Patient be bended forwards, and at the ſame time a little towards the oppoſite Side, that the Ribs may recede the more from each other, and the intercoſtal Muſcles be ſtretch'd. Then with a Knife gently incurated, and the Back and Apex of which are to be cover'd with the fore Finger, the Surgeon is to cut the ſtretch'd intercoſtal Muſcle and Pleura, penetrating cautiouſly, and with a ſmall Wound, into the Cavity of the Thorax, leſt he ſhould wound the Lungs. As ſoon as the Pleura is cut, the Lungs immediately collapſe, and recede from the Rib; after which the Wound may be ſafely dilated. The Inciſion to be made parallel to the Ribs, in the middle Space between them, and with the Edge of the Knife downwards, in order to avoid the intercoſtal Veſſels, adjacent to the inferior Part of the ſuperior Rib, which is falcated.

By an Obſervation of theſe Cautions, the Operation is moſt ſafely perform'd: In practical Authors, there are, however, ſome Directions of leſs Moment to be found. Thus *Fabricius ab Aquapendente*, *in operat. Chirurg. Cap.* 45. orders the Patient at the time the Pleura is cutting, to expire ſtrongly, that the Lungs, by this means, receding from the Pleura, may not be hurt by the Knife. But from Phyſiology 'tis now known, that the Lungs, both in Inſpiration and Expiration, are continually contiguous to the Pleura, and that they are expanded according to the Dilatation of the Breaſt. *Hippocrates*, in *Aphor.* 27. *Sect* 6. informs us, that if dropſical Patients, or thoſe labouring under an Empyema, are cut or cauteriz'd, and the Water or Pus diſcharg'd all at once, they die. Hence ſome have ordered, that the extravaſated Blood ſhould not be evacuated all at once, but at different times. But in an Empyema, or Dropſy of the Breaſt, the Lungs are long macerated by the Pus, or extravaſated Serum. Hence, if the Whole of this Sordes is at once evacuated, the Blood, ſuddenly dilating the almoſt conſum'd Veſſels of the Lungs, may burſt them, and occaſion a ſudden Death. But in Wounds of the Thorax, when this Operation is perform'd, we rarely defer it ſo long, that this is to be dreaded; and 'tis certain from many Chirurgical Operations, that all the extravaſated Blood has been in this manner ſafely and ſuddely evacuated. It much facilitates this Operation, that the extravaſated Humours, by compreſſing the Lungs, and by their Weight depreſſing the Diaphragm, occaſion that upon cutting the Pleura theſe Parts are not ſo eaſily wounded.

We have already obſerv'd, that the Lungs ſometimes adhere to the Pleura. Now, if the Paracenteſis ſhould be perform'd in the Part where ſuch an Adheſion is, 'tis ſufficiently obvious, that great Difficulty muſt ariſe from ſuch a Circumſtance. Moſt Chirurgical Authors, who have wrote on this Subject, inform us, that this has happen'd to them; in which Caſe they order the Surgeon, by introducing his Finger into the Wound, cautiouſly to ſeparate the Lungs from the Pleura, to which they adher'd; and certainly nothing elſe remains to be done, tho' it ſeems cruel thus to lacerate concreted Parts in a living Perſon; for, unleſs this was done, the Paracenteſis would be performed in vain. *Hippocrates*, in his Treatiſe *de Morbis*, has a ſurpriſing Paſſage relating to this; for he there deſcribes the Diſorders which ariſe when the Lungs fall upon the Side [ὁ πλεύμων πεσσπεσὼν ἐς το πλευρὸν] which ſufficiently agree with thoſe Phenomena, which appear after acute inflammatory Diſorders, in which the Lungs adhere to the Pleura: And the Method of Cure he preſcribes for ſuch Diſorders, alſo, confirms this; but he afterwards adds, "But if this Misfor-"tune ſhould happen by a Wound, or by an Inciſion for the "Empyema, we are to fix a Bladder to a Pipe, introduce it into "the Wound, blow it full, and force it forwards by means of "a ſolid tin Probe."

From this Paſſage we may conclude, that *Hippocrates*, in order to divide the Lungs from the Pleura, introduc'd a folded Bladder into the Wound, and afterwards blow'd into it, that thus, being diſtended in the Cavity of the Thorax, the Lungs might be ſeparated from the Pleura, to which they adher'd. Or, at leaſt, we may hence deduce, that the Antients attempted the Separation of the Lungs from the Pleura, for fear of ſuch a Concretion. Some adviſe the Integuments, and Intercoſtal Muſcles, to be prudently cut without wounding the Pleura, and then carefully to examine the denudated Part of the Pleura, whether from its unuſual Thickneſs or Calloſity, 'tis to be dreaded, that in this Part the Lungs adhere to the Pleura; in which Caſe, it would be expedient to lengthen the Inciſion, till we come to a Part free from the Adheſion. But ſuch an Operation is more eaſily demonſtrated on a Carcaſs, than perform'd on a living Perſon, on whom it ſeems very cruel to perform, ſo ſlow an Inciſion thro' the Integuments and Muſcles: But there are ſometimes ſo ſurpriſing Concretions of the Lungs to the Pleura, as to render this Operation entirely uſeleſs. Thus, ſays *van Swieten*, in a young Gentleman who died of an Apoplexy after a Spitting of Blood, I ſaw the middle Lobe of the Right Side of the Lungs every-where ſo adhering to the Pleura, that the Right Cavity of the Thorax was divided into two diſtinct Cavities. If in ſuch a Caſe a Wound had been made in the ſuperior Part of the Right Breaſt, 'tis ſufficiently obvious, that the Paracenteſis muſt have been of no Service, if perform'd in that Part. But Caſes of this kind rarely occur, and Errors of this ſort are not to be aſcrib'd to the Surgeon, ſince ſuch a latent Circumſtance could not be diſcover'd by any Signs.

After the Perforation of the Thorax, all the Meaſures before preſcribed are to be us'd in order to evacuate the extravaſated Blood. But if Liquors proper for diſſolving concreted Blood are to be injected, they may be commodiouſly convey'd thro' the Wound firſt inflicted, becauſe 'tis pretty high in the Thorax; after which they are eaſily diſcharg'd thro' the new Aperture.

If Wounds of the Thorax are diſtended by no Tents, and uncover'd rarely; if the Acceſs of the Air is prevented; if by artificial Suction, and a due Effort of Reſpiration, the admitted Air is expel'd; and if Cold is avoided; they are ſoon and efficaciouſly cur'd, if they are curable.

We have already ſpecified the Reaſons, for which the Uſe of Tents is to be condemn'd, in ſuch Wounds as do not penetrate into the Thorax; but when it ſeems expedient, not all at once, but at different times, to evacuate the Liquids contain'd in the Cavity of the Thorax, which rarely, tho' ſometimes, happens in Wounds of the Breaſt, Water, or Pus, as *Hippocrates* obſerves, being collected in it, then a Tent is to be put into the Wound, that the Matter ſtagnating in the Breaſt may be evacuated at Pleaſure. And *Belloſte*, in his Hoſpital Surgeon, tho' in all other Caſes he condemns the Uſe of Tents, yet adviſes the Uſe of them the firſt Day after the Paracenteſis, leſt the new Inciſion of the Pleura ſhould be concreted; but after this they always ſeem to be hurtful, ſince by abſorbing the Fluids they become tumid, and by the Motion of the Thorax, rub upon the Libs of the Wound, which by that means become callous, and render the Cure more difficult. Some pretend that, by means of Tents, the Acceſs of the Air into the Cavity of the Thorax is prevented; but every time the dreſſing is renew'd, that Fluid enters freely thro' the open Wound; and when its Return is hinder'd by the Application of a new Tent, it is dilated by the Heat, often finds ſtrange ways for it, ſelf, and may produce the worſt of Emphyſemas. 'Tis, therefore, better to cover the Wound with a plain Pledget, and leave a free Paſſage for the Humours to be diſcharg'd; and if the Wound is pretty large, we are to take care, that the Pledget do not fall into the Cavity of the Breaſt, which ſome practical Authors affirm to have happen'd with reſpect to Tents. Thus *Tulpius*, in *Obſerv. Medicin. Lib.* 2. *Cap.* 15. informs us, that a certain *Daniſh* Gentleman being wounded in the Thorax, and not duly taken care of by his Surgeon, a Tent fell into the Cavity of his Thorax, which he expectorated ſix Months after, and afterwards enjoy'd a State of perfect Health. Another Inſtance of the like Nature is found in *Hildanus*, *Obſ. Chirurg. Cent.* 1. *Obſ.* 46.

Another Step, neceſſity in this Caſe, is, to hinder the Air from entering the Cavity of the Thorax, and, if it has enter'd, to

evacuate

evacuate it. So long as the extravaſated Liquids are not evacuated from the Cavity of the Breaſt, 'tis impoſſible to hinder the Ingreſs of the Air, becauſe a free Diſcharge of the extravaſated Humours is requiſite; but when no more Matter is diſcharg'd thro' the Wound, then the Air in the Thorax between the Lungs and Pleura is to be evacuated, and its future Ingreſs carefully prevented; for 'tis certain from Phyſiology, that, in order to a free Expanſion of the Lungs, by the inſpir'd Air, there muſt be no Air in the Cavity of the Thorax. This Evacuation of the Air may be obtain'd by Suction, but beſt of all in the following manner: The Lips of the Wound are to be clos'd by the Fingers, that no Air can enter; then the Patient is, by a ſlow and profound Inſpiration, to draw in a large Quantity of Air, and retain it in the Lungs as long as he can. The Air thus retain'd, being rarefied by the Heat, will expand the Lungs, and by that means compreſs the Air between the Pleura and the Lungs. If, in this Caſe, before the Patient performs Expiration, the Lips of the Wound are ſeparated, a large Quantity of the Air in the Cavity of the Thorax, will be expreſs'd: Upon this, the Lips of the Wound are to be immediately clos'd; and then let the Patient perform Expiration, but not before. If this Method is ſeveral times repeated, all the Air in the Cavity of the Breaſt will be expel'd, and the Patient will immediately find his Reſpiration eaſier: When all the Air is thus expel'd, we ſuddenly apply an adheſive Plaiſter, at the time the Patient retains the inſpir'd Air in his Lungs; for then the diſtended Lungs, being contiguous to the Pleura, will hinder the Ingreſs of the Air thro' the Wound. This Plaiſter is left on as long as poſſible; and if there is a Neceſſity for a new Dreſſing, a ſimilar Plaiſter is to be applied, with the ſame Cautions; and certainly rare Dreſſing is in no Wounds more beneficial, than in thoſe which penetrate into the Cavity of the Thorax. The Efficacy of this Method is prov'd by the Experiments made on live Animals, mention'd under the Article VULNUS; for when, by Perforating both Sides of the Thorax with a large Wound, Reſpiration ceas'd, and the Animal ſeem'd dead, upon extracting the Air from the Cavities of the Breaſt, the Animal reviv'd, and Reſpiration was immediately reſtor'd.

But, as, all the Parts contain'd in the Thorax, lying near the Heart, the Source of Heat, are continually cheriſh'd with a gentle Warmth, we are to take care, that they be not injur'd by an unuſual Cold in dreſſing the Wound. Hence, the State of the Air is always to be kept warm, eſpecially when the Dreſſings are renew'd.

By theſe Meaſures, Wounds penetrating into the Cavity of the Thorax, tho' of the moſt dangerous Kind, and accompanied with the moſt terrible Symptoms, have been ſometimes cur'd; nor are we eaſily to deſpair, ſince Inſtances of very ſurpriſing Cures of this Kind are recorded by Authors, as is ſhewn under the Article VULNUS: That great Harm is always to be dreaded from ſuch Wounds, is certain; ſince the vital Viſcera, the Heart, the Lungs, and the largeſt Blood-veſſels, are ſituated in the Thorax. But as Wounds of the Heart are not always abſolutely mortal, [tho' *Pliny*, in his *Natural Hiſtory*, *Lib.* 11. *Cap.* 37. affirms, that they are inſtantaneouſly fatal] 'tis obvious, that ſome Hopes remain in the moſt deſperate Wounds, ſince Men, who, in conſequence of Wounds, of the largeſt Blood-veſſels, have been given over for dead, have yet recover'd, when no Methods were us'd for their Relief, nor any Cordials exhibited in order to recruit their Strength. 'Tis not only certain from Experience, that violent Wounds of the Thorax have been cur'd; but, alſo, that they have been cur'd in a very ſhort time: Of this there is a memorable Inſtance in *Belloſte's* Hoſpital Surgeon, *Part* 2. *Cap.* 8. The ſame Author, alſo, furniſhes us with various Caſes, which evince, that the moſt deſperate Wounds of the Thorax, and ſuch as are accompanied with the worſt of Symptoms, have ſometimes been happily cur'd, by rare Dreſſing without the Uſe of Tents.

Then all the violent Symptoms before-mention'd are prevented: The worſt Conſequences which appear after Wounds of the Thorax, ariſe almoſt only from the Ingreſs of Air into the Cavities of the Thorax; or from the extravaſated Liquors, which either leſſen the Cavities of the Thorax, or by their Corruption injure the contain'd Viſcera. When ſuch Wounds are not clos'd up with Tents, the extravaſated Blood is freely diſcharg'd. Rare Dreſſing and the Cautions already directed, prevent the Ingreſs of the Air, which, when admitted, may be evacuated in the manner before directed. Hence, a ſucceſsful Cure is always obtain'd, unleſs ſuch Parts as are abſolutely neceſſary to Life are wounded; and it is at the ſame time obvious, that the Hiſtory and Cure of Wounds of the Thorax afford great Light in many Diſeaſes of the Breaſt, and Viſcera contain'd in it. *Van Sweiten.*

FROM HEISTER.

Wounds of the Thorax are of three Sorts; 1. External; 2. Penetrating into the Cavity of the Thorax, without injuring its Contents; or, 3. The Internal Parts are alſo injur'd.

The Wound may be known to be external only, by ſeveral Methods: 1. By the Sight; 2. If no Sound is perceived from the Wound in breathing; 3. If neither the Finger, nor a Probe, can be introduced into the Cavities of the Thorax; 4. If, upon injecting warm Water with a Syringe, it immediately returns; or, 5. When no violent Diſorders appear, ſuch as Difficulty of breathing, Faintings, and other dangerous Symptoms. All theſe Circumſtances being carefully examined, if it appears that the Wound is only external, it may be dreſſed with a digeſtive Ointment, and vulnerary Balſam, and treated in the ſame manner with other ſlight Wounds.

Sometimes indeed it happens, that external Wounds of this kind run deep and obliquely between the Muſcles and Ribs, ſo that the Wound cannot without Difficulty be cleanſed from the Blood and Matter: Hence, the contained Matter may putrefy, and corrode the neighbouring Parts; and produce Ulcers, and incurable Fiſtulas; or, by forcing its Way through the Pleura, into the Cavity of the Thorax, it may occaſion an Empyema, Phthiſis, or even Death.

In order to prevent theſe Diſorders, particular Care muſt be taken to clear the Sinuſes of the Wound of the Blood and Matter, either by Compreſſion, by the Suction of an healthy Perſon, by extracting it with a Syringe, or, if neceſſary, by making farther Inciſion. The Remainder of the Cure is to be performed as we above directed. The moſt proper Bandage, for ſecuring the Dreſſings, is the Napkin with the Scapular; which, however, muſt not be made too tight, that the Diſcharge of the corrupt Matter may be facilitated.

Various Sorts of Syringes, for extracting the Blood, are uſed in this Caſe. Some are ſtraight, others crooked. Some Surgeons uſe a tin Syringe, about twice as large as that repreſented in *Tab.* XXVII. *Fig.* 8. whoſe Mouth B is larger than the Pipe AA, and may be either triangular, round, or oval; its true Size is exhibited at *Fig.* 9. In uſing this Syringe, its Mouth muſt be exactly fitted to the Orifice of the Wound, and the Blood extracted by drawing out the Sucker of the Syringe. It is therefore neceſſary to be provided with Mouths of different Sizes, accommodated to different Wounds. Concerning the Excellency and Uſe of theſe Syringes, it may be proper to conſult *Auel* in his Treatiſe call'd *L'Art de ſuccer les Playes.*

When the Wound penetrates into the Cavity of the Thorax, it may be diſcovered, 1. By the Sight, when you can plainly ſee into the Cavity; 2. By Feeling, when the Finger or Probe may be introduced into the Cavity; 3. By Hearing, when the Patient makes a particular ſort of Noiſe in drawing his Breath; 4. From the Agitation of the Flame of a Candle, or of Feathers, when held near the Wound, in Reſpiration, or in Coughing; 5. From the Injection of warm Water, when it appears to be received into the Belly; or laſtly, from a Difficulty of breathing, Faintings, and other violent Symptoms; which may proceed from the Compreſſion of the Lungs, or from the Blood collected in the Cavity, or from both theſe Cauſes.

When Blood is diſcharged into the Cavity of the Thorax, which, however, is not always the Caſe, the Expanſion of the Lungs, Reſpiration, and the Circulation of the Blood in the Lungs, muſt be impeded; and the Blood being by theſe means inſpiſſated in the Lungs, Death muſt be the Conſequence. But, though the Quantity of Blood lodged in the Thorax ſhould not be ſufficient to obſtruct the Breathing, or Courſe of the Blood in the Lungs, yet ſtill there is great Danger, that this Blood ſhould by Degrees putrefy, and conſequently corrupt and conſume the Diaphragm, the Pleura, or the Lungs, producing many violent Symptoms, and at laſt inevitable Death.

When Blood has been diſcharged into the Thorax, it appears from the following Symptoms; 1. When there is a Difficulty of breathing, and the Patient cannot draw his Breath, unleſs whilſt ſitting upright; 2. When the Patient lies eaſieſt upon his Back, or wounded Side, and finds lying upon the ſound Side, extremely troubleſome, or even impracticable; 3. When the Patient feels the Diaphragm, as if it were, preſſed with a Weight; 4. If the Fluctuation and Agitation of the Blood is perceived inwardly, upon turning the Body round; and, laſtly, If little or no Blood flows outwardly from the Wound.

When from theſe Signs it appears, that Blood is collected in the Cavity of the Thorax, care muſt be immediately taken to procure its Diſcharge. 1. If, therefore, the middle or lower Part of the Thorax be wounded, and the Orifice be large, the Patient ſhould be laid upon the wounded Side, and adviſed to draw his Breath vehemently, or endeavour to cough. *Dionis*, in his Surgery, relates, that, in a Caſe of this Kind, he left the Patient inclined all Night, upon the Wound without dreſſing, and afterwards happily completed the Cure; and *La Motte* gives us another Inſtance of this Kind in his *Obſervationes Chirurgicæ.* If the Paſſage ſhould be obſtructed by Clots of Blood, they muſt be remov'd with the Finger, or a Probe, or ſucked out with the Syringe. 2. If the Blood be already too thick to flow out of the Wound, a digeſting and attenuating Injection becomes neceſſary; which may be made of a Decoction of Barley, common Honey, Honey of Roſes, mixed with a little Soap, which muſt be ſeveral times injected, and again diſcharged, till all the Blood appears to be extracted out of the Cavity. For this Purpoſe, the Syringe of *Tab.* XXVII. *Fig.* 8. may be uſed, with the Pipes deſcrib'd in *Fig.* 10 and 11.

3. If the Wound be ſo narrow, or oblique, as not to permit the Diſcharge of the contained Blood, it muſt be cautiouſly enlarged by Inciſion, either with the common Knife, and grooved Probe, or with ſuch Knives as are repreſented in *Tab.* V. *Fig.* 3. 4. and 5. But particular Care muſt be taken, not to give the Patient too much Fatigue, by endeavouring to diſcharge the extravaſated Blood all at once; and therefore, if he be weak, the Blood may be extracted at Intervals; eſpecially, if he be ſubject to Swoonings. In the mean time it will be proper to introduce into the Wound, to keep it open, a Leaden or Silver Pipe, like thoſe of *Tab.* XXIII. Q, R, S; or, if more convenient, a flexible one, like that of *Tab.* XXVI. *Fig.* 9. Some, inſtead of theſe Pipes, uſe Tents armed with a String, or a long narrow Bit of Linen, dreſſing with Plaiſters and Compreſſes, ſecuring the Whole with the Napkin and Scapular, till no Blood or Matter appears upon the Dreſſings; and then the Wound may be conveniently healed.

But if the Wound ſhould be inflicted in the upper Part of the Thorax, or between the ſuperior Ribs, then this Method of inclining the Body upon the Wound has generally but little Effect, in diſcharging the Blood contained in the Cavity, as the Patient muſt be turned upon his Head. If, therefore, the Suction of the Syringe ſhould prove ineffectual, another Aperture ſhould be made in the lower Part of the Thorax, by Inciſion, which Operation is called Paracenteſis. This Aperture, is generally made between the ſecond and third Rib, if the Blood is lodged in the Left Side; or between the third or fourth, if in the Right Side, about the Diſtance of an Hand's-breadth from the Spine of the Back, which ſhould be marked with Ink. The Trocar is generally uſed on this Occaſion, which muſt be introduced above the Rib into the Breaſt, very cautiouſly and gently; then retracting the triangular Part of the Inſtrument, leave the Pipe, for the Diſcharge of the confined Blood, which may, alſo, be extracted by the Suction of a Syringe. But as the Lungs may be readily injured by the Trocar, it may, therefore, be ſafer, firſt to open the Integuments with the Knife, and then gently to make an Incision through the Intercoſtal Muſcles, and at laſt through the Pleura itſelf; taking particular Care, that the Lungs, which often adhere to the Pleura, be not at the ſame time wounded. This Operation being properly performed, proceed in the reſt of the Cure as before directed; and the ſuperior Wound muſt be healed expeditiouſly, with a vulnerary Balſam, and proper Plaiſters.

As the Lungs frequently adhere to the Pleura, this Operation requires particular Circumſpection in the Surgeon. The Pleura, therefore, muſt be opened with the greateſt Tenderneſs; and then the Surgeon muſt examine, whether the adheſive Lungs can be ſeparated with the Finger or Probe. For if the Lungs are too firmly connected with the Pleura, all the Pains taken to perforate the Thorax, in order to diſcharge the Blood, prove ineffectual

If by theſe means the Thorax can be cleanſed, the Wound needs only be dreſſed once a Day, and that with all Expedition, in order to prevent the Intruſion of the external Air. It will, alſo, be neceſſary for warming and attenuating the external Air, to have a Chafing-diſh of hot Coals placed near the Thorax, at the time of Dreſſing; ſometimes, likewiſe, it may be neceſſary to extract the Air, that has obtained Admittance into the Wound, with a Syringe; and the Patient ſhould be adviſed to draw his Breath with more than ordinary Vehemence. Then the Wound muſt, without Delay, be dreſſed with a vulnerary Balſam, Plaiſters and Compreſſes, and the Whole muſt be ſecured with a proper Bandage: This Method muſt be continued, till the Wound is almoſt entirely conglutinated.

When any of the Contents of the Thorax are wounded, as the Heart, the Aorta, the Vena Cava, the Pulmonary Vein or Artery, the Diaphragm, or a large Portion of the Lungs, Death is generally too ſudden for all the Art of the Surgeon. But if the Lungs are only ſlightly wounded, that is, if only the ſmaller Ramifications of the Aſpera Arteria, and pulmonary Vein, are divided, the Danger is indeed very great, though the Wound may be curable; and a Cure of this Kind is completed more by the Strength of Nature, than the Skill of the Surgeon.

We may conclude, that the Lungs are wounded, when a large Quantity of frothy Blood is diſcharged at the Mouth, and attended with a ſhort Cough; when the Blood appears florid at the Wound; and when Breathing is performed with a particular Noiſe. The Duty of the Surgeon, in ſuch Wounds, ſeems to conſiſt in extracting the Blood collected in the Cavity of the Thorax, and treating the Wound externally, as we have already directed; for the internal Wound will admit of being dreſſed. In ſuch Caſes, therefore, when the Effuſion of Blood ſpontaneouſly ceaſes, the Patients may be preſerved, though, after their Recovery, they are extremely ſubject to Ulcers of the Lungs, and Conſumptions. But when the larger Blood-veſſels of the Lungs are divided, the Violence of the Hæmorrhage either occaſions immediate Death; or, if it ceaſes a little, it is liable to return, and cut off the Patient in a more lingering manner. In order to prevent ſuch a Relapſe, the Patient ought to keep himſelf quiet for ſome Days; to ſpeak little or not.; to take lenient internal Medicines, proper for ſtopping an Hæmorrhage; to avoid every thing that is acrid or heating; and, if the Patient has Strength ſufficient, Veneſection ſhould be performed.

Sometimes the divided Part of the Lungs is protruded into the Wound of the Thorax, where it firmly adheres, as *Fontanus*, *Tulpius*, and *Ruyſch*, have obſerved; nor is it proper to repreſs it, leſt the Blood ſhould be diſcharged into the Cavity of the Thorax. It will, therefore, be ſafer to allow this Part of the Lungs to remain in the external Wound, and to treat it with a vulnerary Balſam, ſcrap'd Lint, and Plaiſters, earneſtly adviſing the Patient to keep himſelf quiet; and thus will the wounded Part of the Lungs by degrees be conglutinated with the external Wound. But if the wounded Part of the Lungs ſhould be protruded without the Thorax, it ſhould be carefully wrapped up in a Piece of ſoft Linen, and a Ligature ſhould be made with a ſtrong Thread above the Linen, cutting off all that projects below the Ligature. The remaining ſound Part of the Lungs ſhould be gently returned by the Finger into the Cavity of the Thorax, leaving the Thread of the Ligature hanging without the external Wound, which muſt be kept open with a Tent, till the Ligature can be extracted; the Cavity of the Thorax muſt be carefully deterged; and the Wound muſt be treated as before directed. *Hildanus*, in *Cent.* 2. *Obſ.* 32. relates a Caſe of this Kind, where the Part of the Lungs prolapſed without the Thorax, being become black and corrupted, was extirpated with a red-hot Knife; and the Patient, after the ſound Part of the Lungs was returned, and the Wound healed, recovered his former Health.

The moſt proper internal Medicines, after the Hæmorrhage is ſtopped, are vulnerary Decoctions, adapted to promote the Cure, with frequent Doſes of *Lucatellus*'s Balſam, or that of *Mecibomius*, obſerving at the ſame time a ſtrict Regulation with regard to Diet. By theſe means the Surgeon may ſometimes preſerve his Patient, at leaſt as far as the Nature of the Circumſtances will permit.

See the Method of performing the PARACENTESIS of the THORAX under the Article EMPYEMA; and the BANDAGES proper for this Part under the Article FASCIA.

THOREXIS, θώρηξις, from θώρηξ, the Thorax, in *Hippocrates*, ſignifies either ſimply a drinking of Wine, or elſe a drinking of Wine purer than ordinary, becauſe, as a Reaſon for the Etymology, it warms and ſtrengthens the Thorax, and arms it, as it were, with a Breaſt-plate. Θώρηξις, in *Galen*'s Exegeſis, is expounded by ὄινωσις ἤτοι ἡ μέθη, "Drunkenneſs with Wine." But *Erotian*, from 2 *Aph.* 21. and 7 *Aph.* 48. expounds it by οἰνοποσία, "a drinking of Wine." *Galen*, alſo, *Com. ad* 2 *Aph.* 21. ſays that *Hippocrates* uſually calls drinking of Wine *Thorexis*, and Drinkers of Wine *Thoreſſomeni*; and, *Com. ad* 7. *Aph.* 48. he ſays θώρηξις, τυγχάνει ἤτοι ἁπλῶς οἶνος ἢ ἀκρατέστερος· "*Thorexis* "is either ſimply a drinking of Wine, or elſe of Wine purer "than ordinary." The Word, alſo, as well as the Verbs θωρήκω, θωρήκομαι, (*thoreco*, *thorecomai*) often ſignify and import Ebriety; for inſtance, *Lib.* 2. *de Morbis*, θωρηξίων ἀπέχεσθω καὶ ἀφροδισίων, "let him abſtain from Ebriety and Venery:" And, *ibid.* ἢν γε ἐκ θωρηξίων ταῦτα πάθη, "if theſe Diſorders proceed "from Drunkenneſs:" And, 4 *Epid.* ἅτοι ἐθώρηξαν, "they were "inebriated:" And, 2 *Prorrhet.* ἢ θωρηχθῇ, "or ſhall be inebriated." Ἀκροθώρηκες (*Acrothoreces*), from ἄκρον, the Top or Extremity, and θώρηξ, the Thorax, with the Antients, were ſuch as had drank but ſlightly, or were but juſt beginning to be inebriated; and *Erotian* ſays, that till his very time they called τὰς μὴ ἐπιπλέον οἰνουμένας, "thoſe who were not much overcome with Wine," *Acrothoreces*. And in *Ariſtotle*'s Problems, *Sect.* 3. *Prob.* 2. the *Acrothoreces*, Ἀκροθώρηκες are oppoſed τοῖς σφόδρα μεθύουσι, "to thoſe who are very drunk." *Heſychius* and *Varinus* write the Word, alſo, θώρικξις, *Thorixis*, and expound it by οἰνοποσία, Οἰνοποσία, a drinking of Wine. *Foeſius.*

THOROS, θορός, from θορέω, to guſh out. Male Sperm.

THORYBOS, θόρυβος, is a Perturbation excited in the Body. Thus *Progn. & Coac.* 282. σφυγμὸς ἐν τῷ ὑποχονδρίῳ θόρυβον σημαίνει ἢ παραφροσύνην. "a Pulſation in the Hypochondrium "indicates ſome Perturbation, or a Delirium." Here *Galen* on the Paſſage ſays, θόρυβον μὲν σημαίνεσθαι, &c. "A Perturbation "is ſignify'd, which is one common Symptom of all dangerous "Caſes, in which not only the Patients, but the Phyſicians "themſelves are under a Perturbation. [θορυβεῖσθαι συμβαίνει]. Θορυβώδεις γνῶμαι ſignify a diſorder'd Mind, or a Mind very ſubject to Perturbation. And, 5 *Epid.* T. 94. we find θορυβώδης γέλως, "a diſorderly Laughter," or a Laughter with a Perturbation, related as a Symptom of a Wound in the Breaſt, which proved mortal. The Word generally imports, as uſed by *Hippocrates*, a Perturbation of Mind. *Foeſius.*

THRACIUS LAPIS. Offic. Gebal. 30. THRACIAN STONE.

This Subſtance is produc'd in the River *Ponto* in *Scythia*, and, by *Dioſcorides*, has the ſame Virtues with the Jet aſcrib'd to it. Authors entertain various Opinions concerning this Stone. *Matthiolus*, from *Galen*, introduces *Nicander* the Poet, as informing us, that if the Stone after Ignition is immers'd in Water, it will be all in a Flame; but is effectually extinguiſh'd by

by an immediate Affuſion of Oil. But it is of no Uſe in Medicine, nor does *Nicander* aſcribe any Virtues to it, except that its fetid Smell, when us'd by way of Fumigation, baniſhes wild Beaſts. But *Matthiolus* concludes, that it is rather a fabulous than a real Stone, ſince neither he, nor any of his Friends, could find it in *Italy*. *Boetius de Boet* informs us, that ſome take it for the Jet, and others for the Pit-coal; and *Wormius* takes it for the ſame with the *Terra Ampelitis*. It is at preſent unknown in the Shops; but, as *Dioſcorides* gives it the ſame Virtues with Jet, ſo Jet may be us'd in its ſtead. *Dale*.

THRANOS, θρᾶνος. A Seat, Chair, or Stool. *Galen. Exeg.*

THRASI. A Name for the *Cyperus*; *rotundus*; *eſculentus*; *anguſtifolius*.

THRASOS, θρᾶσος. *Hippocrates* uſes this Word to expreſs a certain Fierceneſs and Audacity of the Aſpect, or Eyes, in or on the Approach of a *Delirium*.

THRAUSMA, θραῦσμα from θραύω, to break. A Species of Gum Ammoniac, which is friable, and broke into ſmall Pieces.

THRINCOS, θρυγκὸς, is expounded by περίβολος, περίφραγμα, a Circumvallation, Paliſade, Incloſure. The Word occurs in *Hippocrates's* Epiſtles, where he ſays of the Tongue, that ὀχυροῖς ὀδόντων θρυγκοῖσι περιφράπται, "it is guarded by the ſtrong Paliſade of the Teeth."

THRISSA, θρίσσα. The ſame as ALOSA. The Shad-fiſh.

THRIX, θρίξ. An Hair.

THROMBOS, θρόμβος. A Grume, or Clot of Blood.

THRONOS, θρόνος, in *Hippocrates*, *Lib.* περὶ ἐυχυμ. is a high Seat, or a Seat in an high Place; where he directs to obſerve the Decubitures of the Sick, as in the following Words: οἱ μὲν γὰρ ἀυλέων ἐς θρόνους, οἱ δ' ἐ καλαγείους ϗ σκοτεινοὺς τόπους· "Some of them (lie ſick) in high and airy, others in dark "and ſubterranean Places, or Seats." *Foeſius*.

THRONUS MARCELLIUS, in *Paulus Ægineta*, *L.* 7. *C.* 12. is the Name of a Paſtil there deſcrib'd.

THRYALLIS. A Name for the *Phlomis*; *fruticoſa*; *Salviæ folio longiore & anguſtiore*.

THRYMMA, θρύμμα, from θρύπτω, to break, is a Fragment, *Lib.* 1. περὶ γυν. *Heſychius* expounds the Word by πλάσμα τῶν ἄρτων, a Morſel of Bread; *Suidas* by τρύφος, *Tryphus*, a Fragment. *Foeſius*.

THUNUS. Offic. Aldrov. de Piſc. 112. Schonf. Ichth. 75. Jonſ. de Piſc. 4. Charlt. de Piſc. 6. *Thynnus*, Bellon. de Aquat. 106. Geſn. de Aquat. 967. Salv. de Aquat. 123. *Thynnus ſeu Thunnus*. Raii Ichth. 176. Ejuſd. Synop. Piſc. 57. *Orcynus*. Rondel. de Piſc. 1. 249. THE TUNNEY FISH, or SPANISH MACKAREL.

The Tunny, which the *Latins* call *Thunnus*, is a pretty large, heavy, big-belly Fiſh, which is plentiful in the *Mediterranean*, eſpecially in *Provence*, and at *Nice*, from whence comes what we ſell: There are, likewiſe, a great many of them upon the Coaſt of *Spain*. The Net being taken out of the Sea, the Fiſh die, not being able to live out of the Water; then they hang them up in the Air, open them, take out their Entrails, and take off the Head; and, having cut them in Pieces, broil them on large Gridirons, and fry them in Olive-oil; and, after having ſeaſoned them with Salt and Pepper, and Cloves, and ſome Bay-leaves, they put them into little Barrels, thus dreſs'd, and ready to eat with freſh Olive-oil, and a little Vinegar, or to tranſport into ſeveral Parts, where this is call'd *Sea Tunny*.

There are two Sorts which have no other Difference, but that ſome have the Black-bone taken out; and for that Reaſon are called bon'd Tunny, and are uſually put up in little white Wood barrels, broad at the Bottom, and narrow at the Top; and that which is unbon'd, is in little round Barrels: Chooſe both Sorts new, firm, laid in good Oil, and the Fleſh white like Veal. Its Uſe is very common in *Europe*, and ſeveral other Parts of the World; as well becauſe it is ready to eat, as becauſe it is of an excellent Taſte like Veal. They commonly catch with the Tunny another Fiſh, which the *Provincials* call *Imperador*, or Emperor; and Dolphins are, alſo, there to be ſeen.

Ariſtotle obſerves, that this Fiſh ſometimes goes up into Rivers. It is covered with large Scales cloſely united to one another, and feeds upon Weeds and Sea-plants. Some relate that this Fiſh ſees better with the Right Eye, than with the Left; and, that it is ſo cruel as to devour its own Young. Some Authors aſſure us, that it lives but two Years; but it is difficult to conceive, how, in ſo ſhort a Space of Time, it can acquire ſo large a Size.

The Tunny contains much Oil, and volatile Salt; is firm, ſhort, and of an excellent Taſte; and yields a nouriſhing, ſolid, and durable Food; and is reckoned to be good againſt Poiſon, the Stinging of Serpents, and the Bite of a mad Dog; but it is hard of Digeſtion. The moſt delicious and juicy Part is the lower Part of the Belly, but it is fatteſt; it adheres to the Stomach, relaxes and debilitates the Fibres, and therefore is not ſo wholſome as the reſt. It agrees with thoſe who are young, bilious, and ſanguine; who have good Stomachs, and are uſed to Exercile. *Lemery on Foods.*

The pickled Fleſh of the Tunny cures thoſe who are bitten

by the Viper called *Præſter*; but the Patient is to vomit plentifully at every Turn with large Draughts of Wine; it is of great Efficacy, alſo, againſt the Bite of a Dog, bein rubbed on the Wound. *Dale* from *Dioſcorides*.

THUREÆ GLANDULÆ. The ſame as TOLLES.

THUS. Frankincenſe. See OLIBANUM.

THUYA. See ARBOR VITÆ.

THYE, θύη (the Plural of θύος) from θύω, to ſacrifice, in *Galen's Exegeſis*, are expounded by θυμιάματα, ἀρώματα, "Perfumes, Spices." *Heſychius* gives much the ſame Explication; only he puts θύματα (*Thymata*) for θυήματα (*Thyemata*); and θυήματα, he ſays, are τὰ ἐπιφερόμενα ἄλφιτα εἰς θυσίαν, "the "Cake offer'd in Sacrifice," Θύεα, in *Homer*, *Il.* Z, *Verſ* 270. are expounded by the Scholiaſt θυμιάματα, θυσίαι, "Perfumes "(or Incenſe) Sacrifices."

Thye, *Thyeia*, *Thyia*, θύη, θυεία, θύϊα, are alſo Names for a Mortar, *Lib.* 1. & 2. γυναικ. *Foeſius*.

THYEMA, θύημα. See the preceding Word.

THYITES LAPIS. Offic. Matth. 1386. *Thyites*. Boet. 415. De Laet. 142. Aldrov. Muſ. Metall. 670. THE GREEN STONE.

This Stone is of a greeniſh Colour, reſembling the Jaſper; tho', when diluted, it renders the Liquor us'd for that Purpoſe of a milky Colour. It is produc'd in *Ethiopia*, is of an highly pungent Quality, and, according to *Dioſcorides*, removes Specks and Dimneſs of the Eyes.

The Thyites of *Dioſcorides* is now unknown to us; but we do not find, that the Writers of former Ages were better acquainted with it. *Fuchſius* thinks, that it is the Lapis Turcicus; but this Opinion is excellently confuted by *Matthiolus*. *Agricola*, in *Lib.* 6. *de Nat. Foſſil.* thinks, that it is not at all different from the *Marochillus*.

THYLACOS, or THYLACION, θύλακος, or θυλάκιον. A Bag, or Pouch. *Thylacion* is us'd to expreſs the Bag form'd by the Membranes of the *Fœtus* at the Orifice of the *Pudenda*, before the Birth.

THYMA, θῦμα. A pruriginous Puſtule excited by Heat.

THYMALLUS. See ASCHIA.

THYMBRA. A Name for ſeveral Sorts of SATUREIA.

THYMBRA HISPANICA. See MASTICHINA.

THYMELÆA.

The Characters are;

The Leaves are entire, the Flower is monopetalous, as it were, Funnel-ſhaped, and quadrifid. The Ovary in the Centre of the Flower becomes an oval Fruit, full of Juice, or dry, and containing an oblong Seed.

Boerhaave mentions four Sorts of *Thymelæa*; which are,

1. Thymelæa; Lauri folio; ſemper virens; ſeu Laureola mas. *Tourn. Inſt.* 495. *Boerh. Ind. A.* 2. 213. *Laureola*. Offic. Ger. 1219. Emac. 1404. Park. Theat. 205. Raii Hiſt. 2. 1587. Synop. 3. 465. *Laureola ſemper virens, flore viridi, quibuſdam Laureola mas.* C. B. P. 462. *Laureola ſemper virens, flore luteolo.* J. B. 1. 564. *Daphnoides & Laureola.* Chab. 45. SPURGE-LAUREL.

This is a low Shrub, ſeldom growing above two or three Feet high; with a woody Stem about a Finger thick, covered with an Aſh-coloured Bark; it is divided towards the Top into ſeveral Branches, cloathed with long, thick, ſmooth, and ſhining green Leaves, which are ſet round the Tops of the Branches. The Flowers grow among theſe Leaves, being oblong greeniſh Tubes, divided at the Ends into four Segments, with a few yellowiſh Stamina in the middle, of a ſweet Smell; theſe are ſucceeded by ſmall oval Berries, of a blackiſh Colour when ripe. It flowers in *March* or *April*, and the Berries are ripe in *September*. The whole Plant is of an hot cauſtic Taſte, burning and inflaming the Mouth and Throat. It grows in Woods and Thickets. The Leaves and Berries are uſed, though but rarely.

They purge Bile, choleric and ſerous Humours, with great Violence, both upwards and downwards; and, by ſome adventurous Perſons, are given in the Dropſy, and to evacuate tough Phlegm from the Lungs; but, being frequently attended with dangerous Conſequences, it is rarely preſcribed by judicious Phyſicians. *Miller's Bot. Off.*

This Plant has the Qualities of the *Daphnoides* of *Pliny* and *Dioſcorides*; for the Leaves vellicate and inflame the Mouth and Fauces. The ſame, taken inwardly, whether green or dry, purge Phlegm by Stool; and provoke Vomiting, and the Menſes. Being chewed, they attract Phlegm from the Head; and alſo, promote the menſtrual Flux. Fifteen of the Berries (five or ten, according to *Pliny*) are a Doſe for a Purge.

The Leaves taken inwardly are very hurtful to the Stomach, provoke Vomiting, and burn and injure the internal Parts. Some Empirics venture to uſe the Leaves and Berries, in hydropical Caſes, to evacuate ſerous Humours; but, ſays *J. Bauhine*, we ſhould be very cautious of exhibiting this Plant, or any Part of it, becauſe of its extraordinary Acrimony; which however, ſays *Ray*, may be corrected by macerating it in Vinegar.

This *Thymelæa*, firſt macerated in Vinegar, then dry'd and pulverized, and the Powder ſprinkled upon a Cancer, is found to be of Service in that Diſorder. Cold and repellent Remedies

are

are proper in an occult Cancer, but not in an ulcerated one. *D. Bowle. Raii Hiſt. Plant.*

The Plant flowers in *February*, and the Bark, Leaves, and black oblong Berries, are uſed.

It is of an igneous, very acrid, exulcerating, and ſtimulating Quality; exciting Fevers; weakening the Force of the Heart, and the noble Parts; and purging Bile and bilious, Seroſities with great Violence: It is corrected by Maceration in Acids. *Dale* from *Schroder.*

2. Thymelæa; Lauri folio deciduo; ſive Laureola fœmina. *Tourn. Inſt.* 595. *Boerh. Ind. A.* 2. 213. *Mezerion, Chamælæa.* Offic. *Chamælæa Germanica ſive Mezerion.* Ger. 1216. Emac. 1402. Raii Hiſt. 2. 1587. *Chamælæa Germanica, ſive Meſerion vulgo.* Park. Theat. 201. *Laureola folio deciduo, flore purpureo, Officinis Laureola fœmina.* C. B. Pin. 462. *Laureola flore deciduo, ſive Mezerion Germanicum.* J. B. 1. 566. MEZEREON, or SPURGE-OLIVE.

This is a low ſhrubby Tree, with many flexible Branches, ſeldom growing above four or five Feet high, ſhooting out Cluſters of Flowers, all round the upper Parts of the Branches, early in the Spring, before the Leaves appear; they are of a pale Purple, or Peach-colour, of a ſingle tubulous Leaf, cut into four Segments at the End; of a pleaſant, ſweet Smell, and are ſucceeded by ſmall, longiſh, round Berries, of a red Colour. The Leaves grow thick together on the Tops of the Twigs, about two Inches long, and ſcarce half ſo broad at the End where they are broadeſt. The Root is full of Branches, and runs deep in the Earth; it is planted here in Gardens, but grows wild about *Geneva*, and the mountainous Parts of *Germany*; flowering in *February* and *March*. The Root, Bark, Leaves, and Berries, are uſed.

They all of them purge ſerous and choleric Humours very violently; and help the Dropſy, and inveterate Aſthma; but, we having milder, gentler, and yet as prevalent Medicines, theſe are very rarely uſed. *Miller's Bot. Off.*

The Bark, Leaves, and red Berries, are uſed, and agree in Virtues with thoſe of the former. *Dale.*

It is in great Eſteem among us, on account of the beautiful Aſpect, and pleaſant Smell, of the Flowers; and is very ſtudiouſly cultivated every-where in Gardens and Green-houſes. The whole Plant, except the Flowers, has a ſtrong Smell, and a very acrid and burning Taſte. There is a Variety in the Colour of the Flowers, ſome being of a paliſh Red, others white; and the Berries are the *Cocci Cnidii*, or *Grana Cnidia*, of the Shops.

This Species is, like the other, of a very cauſtic and exulcerating Quality: Chewed in the Mouth, it burns the Fauces and Oeſophagus, the troubleſome Senſation and Impreſſion from it laſting a long time, as we are aſſured by *Lobel*, and by Experience. It is corrected by macerating it four-and-twenty Hours in Vinegar, as the *Elleborus* and *Eluſa* are, or in the Juice of Pomegranates or Quinces, or of Purſlane, or in Mucilage of the Seeds of *Pſyllium*. Some correct it by infuſing it in Wine, and afterwards drying it, others macerate it three Days in Vinegar, every Day pouring freſh Vinegar on it, and at laſt giving it a thorough waſhing with Water.

But the Leaves, Bark, and Berries, in what manner ſoever corrected and prepared, very ſeldom come in Uſe, on account of their Malignity; and are not to be exhibited, but for want of ſafer Medicines, and in deſperate Caſes, and even then with great Caution and Conſideration. *Raii Hiſt. Plant.*

3. Thymelæa; Lauri Folio deciduo; flore albido; fructu flaveſcente.

4. Thymelæa; Alpina; linifolia; humilior; flore purpureo; odoratiſſima. *Tourn. Inſt.* 594. *Boerh. Ind. A.* 2. 213. *Cneoron niger.* Offic. *Cneoron Matthioli.* Ger. Emac. 1596. *Cneoron Matthioli ſuffrutex.* J. B. 1. 570. *Thymelæa minor, ſive Cneoron Matthioli.* Park. Theat. 201. *Thymelæa affinis facie externâ.* C. B. Pin. 463. Raii Hiſt. 2. 1589. ROCK-ROSE.

It is a beautiful Under-ſhrub, conſiſting of a Multitude of ſlender, flexible, ſurculous Branches, which ſhoot directly out of the Earth, and diffuſe themſelves on the Ground. The Leaves are diſorderly diſpoſed, nearly reſembling thoſe of the *Thymelæa vera*, at firſt of an unpleaſant, afterwards of a better Taſte, with very little or no Acrimony, as far as I could perceive by the Taſte. The Flowers grow on the Tops of the ſmall Branches, ſix, ſeven, or more, cloſe together, and are tetrapetalous, of a red Colour inclining to purple, almoſt like the Flowers of the leſſer Centaury, of an ungrateful and bitter Taſte, but of a very beautiful Aſpect, fragrant, and affecting the Head, if long ſmelled to. Theſe are ſucceeded by a ſmall Fruit, not unlike that of the *Thymelæa*, tho' not red, but white, and ſomewhat oblong, containing a Seed mix'd with an Aſh-colour'd Membrane, round, and of the Size of a Grain of the *Thymelæa*. The Root is long, generally of the Thickneſs of the little Finger, ſometimes blackiſh, but commonly yellowiſh, tough and flexible, and ſometimes ſlendereſt in its upper Part: Whence proceed the flexible Branches, which are diſpers'd on the Ground; and here-and-there, according to the Cavities of the *Ala*, ſhoot forth yellowiſh Fibres of a competent Thickneſs.

It grows on many of the Mountains about *Vienna* in *Auſtria* in ſo great Abundance, that the Country-women gather the Flowers by Handfuls, and ſell them in the Market, where they buy it to adorn their Dining-rooms: It flowers generally in *April*, and the Fruit is ripe in *June*; ſometimes it flowers thrice in a Year. *Raii Hiſt. Plant.*

It agrees in Virtues with the *Chamælæa*. *Dale.*

The Antients us'd the Leaves of the *Thymelæa* to evacuate ſerous Humours; it is a moſt violent Cathartic, and is corrected with Sugar. *Hiſt. Plant. adſcript. Boerh.*

Beſides the foregoing Sorts of *Thymelæa*, *Dale* mentions the two following; which are,

1. THYMELÆA. Offic. Ger. 1217. Emac. 1403. Park. Theat. 201. Raii Hiſt. 2. 1588. *Thymelæa foliis Lini.* C. B. P. 463. Tourn. Inſt. 594. *Thymelæa Monſpeliaca.* J. B. 591. SPURGE-FLAX.

This is a Shrub an Inch ſometimes in Thickneſs, and a Cubit or more in Height, and divided into many ſlender, beautiful ſtrait Twigs, a Cubit in Length, ſurrounded by evergreen Leaves, pretty well reſembling thoſe of Flax, but larger and broader, not blunt like thoſe of the *Chamælæa*, nor ſo brittle, but mucronated, tough, and feeling ſomewhat gummy under the Teeth. The Flowers grow in great Plenty on the Ends of the Branches, and are tetrapetalous, white, nearly reſembling thoſe of the *Olea*, or Olive-tree, and generally hang in Cluſters. The Fruit is ſometimes of the Size of Myrtle-berries, but ſomewhat longer, green at firſt, but afterwards red as Coral, with a juicy Pulp, like that of Cherries, incloſing a Seed, cover'd with a black and frail Membrane, and containing a Medulla of a fervid Taſte. The Root is hard and woody, and cover'd with a thick, but very tough and tenacious Bark, as is alſo the whole Plant.

It grows in *Italy*, and in *Provence* and *Languedoc* in *France*, in low Grounds, among other Shrubs, almoſt every-where. *Cluſius* ſays, that it grows in rugged Places over all *Spain*.

The moſt skilful Botaniſts take the Fruit of this Plant to be the *Coccus Cnidius*, or *Granum Cnidium* of the Antients, tho' the Shops take the Berries of the *Mezereon* for the *Grana Cnidia*. The *Coccus Cnidius* is of a very cauſtic Quality, and burns the Fauces, whence we wonder, that Partridges and ſmall Birds feed ſo greedily on the Berries of the Thymelæa. But the *Grana*, or Grains, are not the entire Berries, which perhaps are eatable, but the Seeds which are incloſed in the Berries. The Peaſants of *Spain* catch vaſt Numbers of ſmall Birds with this Seed, by Help of a crooked Rod, and ſome Lime, as we are inform'd by *Amatus* and *Cluſius*. We are adviſ'd by *Camerarius*, to beware of eating the Root, becauſe it proves mortal in a few Hours. *Raii Hiſt. Plant.*

It is cultivated with us in the Gardens of the Curious, and the Berries called *Grana Cnidia* are uſed, being of a cauſtic Quality. The *Engliſh* Shops, as well as ſome of the moſt skilful Botaniſts, take the Fruit for the *Coccus Cnidius*, or *Grana Cnidia*, but *Cordus* and *Schroder* will have the Berries of the Mezereon to be the *Grana Cnidia* of the Shops. *Dale*

2. SANAMUNDA. Offic. *Sanamunda prima Cluſii* Ger. Emac. 1595. Park. Theat. 203. *Thymelæa foliis Chamælææ minoribus ſubhirſutis.* C. B. P. 463. Tourn. Inſt. 594. *Thymelæa foliis caudicantibus, ſerici inſtar mollibus.* Raii Hiſt. 2. 1538. *Tarton-raire Maſſilienſium.* Park. Theat. 199. *Tarton raire Gallo-Provinciæ.* Ger. 408. Emac. 506. *Tarton-raire Maſſilienſium, Sanamunda prima Cluſii.* J. B. 1. 523. HEATH-SPURGE

This is a Shrub, a Cubit in Height, very ramous; the Root runs very deep in the Earth, and is cover'd with a Bark extremely viſcous and pliant, and capable of being drawn into very ſmall Threads, not without Flocks, which you may call Wool: The Branches are, alſo, cover'd with the like Bark; but overlaid with a denſe, whitiſh, and, as it were, Silver-colour'd tomentaceous Subſtance. The Leaves are of the Size of thoſe of the *Tarentine* Myrtle, only a little broader towards the Extremity, and ending in a more obtuſe Point, quite cover'd with Down, ſoft to the Touch, and whitiſh, or Silver-colour'd, and ſhining. From the midſt of theſe Leaves proceed the Flowers, reſembling thoſe of the *Olea*, yellow, oblong, and tetrapetalous. The Fruit, as *Cluſius* was inform'd, is much like that of the Thymelæa, but of a blackiſh Colour. The ſame Author *Cluſius* ſays, that the Leaves are carnous, gummous, and bitteriſh at firſt; but leaving an acrimonious and burning Taſte behind.

It grows about *Marſeilles*, on the Declivities towards the Sea, and very plentifully on the dry, ſqualid, and gravelly Hill called *Ment roud.*

The Leaves are of a cauſtic Quality, as has been ſaid, and very much in Uſe among the *Spaniſh* Peaſants, on account of their cathartic Virtue; but this Property, ſays *Lobel*, is ſo violent, and difficult to be reſtrained, that it frequently induces Dyſenteries, and immoderate Fluxes; and therefore is not to be given but to robuſt Perſons, and then with Caution. *Raii Hiſt. Plant.*

THYMELÆA is, alſo, a Name for the EMPETRUM; which ſee.

THYMIAMA, θυμίαμα. A Suffumigation of Aromatics.

THYMION, θύμιον. A Caruncle, or Tubercle, generated in the Pudendum, Anus, Glans, or Præputium. *Galen. M. M. Lib.* 14. *Cap.* 13. *& Lib. de Tumor. præter Nat.* The *Latins* call it *Thymion* and *Thymus*. *Hippocrates*, *Lib. de Ulceribus*, says that the Parthenium called μικρόφυλλον (*tenuifolium*) cures a *Thymion* affecting the Præputium.

What they call an *Acrothymion* (*Thymion*) says *Celsus*, elevates itself above the Superficies like a Wart, being narrow and slender at the Skin, but broader above, somewhat hard, and very rough at the Top, where it is of the Colour of the Flowers of Thyme, whence it has its Name, and easily cleaves and bleeds, and sometimes discharges a small Quantity of Blood. It is usually of the Size of an *Egyptian* Bean, seldom bigger, sometimes very small; sometimes but one, sometimes several together, are generated in the Palms of the Hands, or Bottoms of the Feet; but the worst and most subject to bleed, are those which affect the Pudenda. *Celsus*, *Lib.* 5. *Cap.* 28.

Thymi, θύμοι, in *P. Ægineta*, *Lib.* 6. *Cap.* 58. are carnous Tubercles, affecting sometimes the Glans, sometimes the Præputium; and, *Cap.* 71. he says, *Thymus* is an Eminence in the Skin, sometimes red, sometimes white, for the most part indolent, and of the Figure of the Tufts or Tops of the Herb *Thyme*.

For the Cure of the *Acrothymion*, or *Thymion*, *Celsus* recommends a Caustic prepared of the Lees of Wine, or a Fig boiled in Water.

THYMITES, θυμίτης. An Epithet for Wine impregnated with Thyme. *Dioscorides*, *L.* 5. *C.* 59.

THYMOXALME. A Preparation of Vinegar, Thyme, Salt, and some other Ingredients, given by *Dioscorides*, *L.* 5. *C.* 24. See ACETUM.

THYMUS, θύμος, in Nosology, is a small, indolent, carnous Tubercle, like a Wart, arising sometimes about the Anus, and sometimes about the Pudenda, of both Sexes, resembling in Shape the Flowers of Thyme

THYMUS, in Anatomy, is that Gland, which in Calves, Lambs, and young Animals, is call'd the Sweetbread.

The Thymus is an oblong, glandular Body, round on the upper Part, and divided below into two or three Lobes, of which that toward the Left Hand is the longest. In the Fœtus it is of a pretty large Size, less in Children, and very little in aged Persons. In Children it is of a white Colour, sometimes mixed with Red; but, in an advanced Age, its Colour is generally dark.

The greatest Part of the Thymus lies between the Duplicature of the superior and anterior Portion of the Mediastinum, and the great Vessels of the Heart, from whence it reaches a little higher than the Tops of the two Pleuræ, so that some Part of it is out of the Cavity of the Thorax; and in the Fœtus, and in Children, it lies as much without the Thorax as within it.

Its particular inward Structure and Secretions are not as yet sufficiently known to determine its Uses, which however seem to be designed more for the Fœtus, than for Adults. It has Vessels belonging to it, called *Arteriæ* and *Venæ Thymicæ*. *Winslow.*

THYMUS, in Botany, is a well known Plant; the Characters of which are;

The Leaves are short, narrow, and rigid; the Stalks ligneous, small, and erect. The Galea is erect, and generally bifid; and the Beard divided into three Parts. The Flowers are collected into little Heads, the lower Whorle being remov'd at some Distance from the Head.

Boerhaave mentions five Sorts of *Thymus*; which are,

1. Thymus; vulgaris; folio latiore. *C. B. P.* 219.

2. Thymus; vulgaris; folio tenuiore. *C. B. P.* 219. *Tourn. Inst.* 196. *Boerh. Ind. A.* 155. *Thymus.* Offic. *Thymum durius.* Ger. 458. Emac. 573. Raii Hist. 1. 521. *Thymum durius vulgare.* Park. Theat. 7. *Thymum vulgare rigidius, folio cinereo.* J. B. 3. 263. THYME.

The common Thyme seldom grows above half a Foot high, full of slender, round, and somewhat hairy Stalks; having two small roundish Leaves, a little pointed at the Ends, set opposite at a Joint: The Flowers grow in loose Spikes towards the Top of the Branches, set in Whorles among the Leaves, of a purple Colour, galeated, and labiated in small hairy Calyces; both Leaves and Flowers have a strong pleasant Smell, and an hot Taste; the Root is composed of a Bush of stringy Fibres. It is planted in Gardens, but grows wild in *Spain* and *Italy*, and flowers in *July*. The whole Plant is used.

Thyme is heating and attenuating, good to free the Lungs from viscid Phlegm; and by that means is helpful to those who are troubled with Wheesing and Shortness of Breath. It is likewise, cephalic, and of Use against all Diseases of the Head and Nurves.

The only Officinal Preparation is the *Oleum Thymi distillatum*. Distil'd Oil of Thyme. *Miller's Bot. Off.*

There is scarce a more common Herb in *Provence* and *Languedoc*. The Virtues are suppos'd much the same with those of SERPYLLUM; which see: But it is particularly serviceable in tartareous Affections of the Lungs and Joints, frees all the Viscera from Obstructions, and excites an Appetite, &c. *Dale* from *Schroder*.

3. Thymus; capitatus; qui Dioscoridis. *C. B. P.* 219. *Raii Hist.* 1. 519. *Tourn. Inst.* 196. *Boerh. Ind. A.* 155. *Thymum verum.* Offic. *Thymum Creticum.* Ger. 459. Emac. 574. *Thymum Creticum sive Antiquorum.* J. B. 3. 262. *Thymum legitimum capitatum.* Park. Theat. 6. *Hyssopus capitata minor, Thymi odore.* Hist. Oxon. 3. 360. TRUE THYME.

It grows plentifully about *Seville* and *Cadiz*, where the Island is join'd by a Bridge to the Continent, and over all *Andalusia*, on the maritime Hills, facing the Sun, and in the Islands of *Crete*, *Sicily*, and *Corcyra*; and in the Island of *Cithera*, now *Cerigo*, there is another Species or Variety of it, with lesser Leaves, growing in Parcels together. It is found over all *Greece*, as *Bellonius* tells us; and no Herb is more common on the Mountains, where, according to the Variety of Soil, it produces a Flower, sometimes all white, sometimes bluish, or purple, or mixt.

This *Thyme*, with Vinegar and Salt, purges Phlegm by Stool; the Decoction is serviceable in an Asthma and Orthopnœa, expels the small Worms called *Tineæ* from the Belly, provokes the Menses, and brings away the Birth and After-birth, and is a good Diuretic. Made into an Eclegma with Honey, it facilitates Expectoration; it discusses Tumors, dissolves concreted Blood, and removes Warts, being rubbed on the Parts with Vinegar. Apply'd with Wine and Polenta, it gives Relief under the Sciatica; and, used in Food, helps Dimness of Sight, and is very good for healthy Persons to eat as Seasoning to their Meats. *Dioscorides.*

Pliny ascribes the same Virtue to it, and adds, that it is exhibited to epileptic Persons, who are roused from their Fit by the Smell of Thyme, and to Men afflicted with Inflations, Flux of the Belly, or Pains of the Testes or Bladder; that, being bruised, and apply'd with Oil on Wool, it is effectual in the Gout and Luxations; and that, for the Gout, it is taken, also, inwardly, to the Weight of three Oboli in three Cyathi of Vinegar and Honey.

The Inhabitants of *Seville*, as *Clusius* says, use a Decoction of *Thyme*, in washing out and cleansing their Wine-vessels, because of its most grateful Smell; and it is of no less Service in giving a good Scent to those Vessels in which they preserve their Grapes. *Raii Hist. Plant.*

4. Thymus; vulgaris; folio tenuiore, candido & graveolente. *C. B. P.* 219.

5. Thymum; legitimum; cephalotes; angustifolium. *Salvad. Boerh. Ind. alt. Plant.*

This Plant is excellent in Suffumigations to revive the Spirits; and, by its extraordinary Fragrancy, is very comfortable to the Brain, and highly exhilarating to the Heart. Infused in cold Wine, it cures the Bites of all venomous Animals, and is recommended against the Bite of a mad Dog. It is very effectual against pituitous and cold Diseases, particularly the Asthma and Cough. A Conserve is prepared of the Leaves with Sugar, and kept in China or Glass-vessels; there is, also, a medicated Wine made of the same, and, also, a Water which has the same Virtues in curing almost all Diseases of the Breast incident to aged and phlegmatic Persons; but in hot or inflammatory Diseases these Plants are not to be used. A little *Thyme* mixed with Wine gives it a most grateful Savour, and both the Smell and Taste of it are very penetrating; whence it becomes sudorific, inciding, penetrating, healing, and opening; and is of Service in the flatulent Colic, restores a decay'd Appetite, is properly given in difficult Labour, and removes Obstructions of the Menses: Externally used, it is effectual against the Pain of the Gout, and cold Tumors. *Hist. Plant. adscript. Boerh.*

THYMUS CEPHALOTES. A Name for the *Satureia*; *Virginiana.*

Besides the foregoing Sorts of *Thymus*, *Dale* mentions the following;

THYMUS SYLVESTRIS. Offic. *Thymus Narbonensis Zygis dictus Serpyllum Creticum.* Ger. 456. Emac. 571. *Serpyllum Narbonense.* Park. Theat. 7. *Serpyllum folio Thymi.* C. B. P. 220. Raii Hist. 1. 523. *Serpyllum sylvestre, Zygis Clusio, Thymo vulgari rigidiori simile.* J. B. 3. 271. *Thymbra Hispanica Coridis folio.* Tourn. Inst. 117. WILD THYME.

This *Thyme*, as *Clusius* describes it, in Appearance, Branches, Height, and Roots, is very like the common *Thyme*; only its Leaves are somewhat broader, and not so sweet-scented; but have a stronger Smell, as between that of *Abrotanum* and *Stœchas*. The Flowers, also, are disposed in Whorles on the small Branches, and are of a white Colour, inclining to Purple; by which Disposition of the Flowers, and its Smell, it can almost only be distinguish'd from the common *Thyme*. It has, also, less Acrimony, as having a Mixture of Astringency. *Raii Hist. Plant.*

It grows in *Old Castile* in *Spain*, in the same Places with the other *Thyme*; but is cultivated with us in the Gardens of the Curious, and is esteemed to have the same Virtues with the *Thymus Offic.* or common Thyme. *Dale.*

THYNNUS. See THUNNUS.

THYROARETÆNOIDEI MUSCULI. Two Muſcles of the Larynx. See LARYNX.

THYROIDEÆ GLANDULÆ. The Thyroide Glands. On the lower Part of the Larynx, upon the Sides of the annular Cartilage, and of the firſt Ring of the *Trachea*, there are two lymphatic Glands called *Thyroidea*, of the Figure of a Pear; their Colour is red; they have Veins, Nerves, and Arteries, as the Larynx. *Keil's Anatomy.* See LARYNX.

Theſe Glands ſecrete a lubricating Fluid, which moiſtens the Cartilages and Muſcles of the *Larynx*. *Boerhaave's Inſtitutes.*

THYROIDES, θυρεοειδὴς, from θυρεὸς, a Shield, and εἶδος, Shape. The Name of a Cartilage of the LARYNX; which ſee.

THYROPHARYNGÆI MUSCULI. Two Muſcles of the *Pharynx*. See OESOPHAGUS.

THYROSTAPHYLINI MUSCULI. Two Muſcles of the *Uvula*. See PALATUM.

THYRSUS. See ACANTHUS.

THYSSELINUM.

The Characters are;

The Root is perennial, large, and very full of a lacteous Juice, as is, alſo, the whole Plant; it has the Leaf of the *Ferula* or *Phellandrium*. The Seed is oval, flat, large, ſtriated, marginated, and ſometimes caſts its Husk.

Boerhaave mentions two Sorts of *Thyſſelinum*; which are,

1. *Thyſſelinum*. Plinii. See APIUM.

2. Thyſſelinum; paluſtre. *T.* 319. *Seſeli, paluſtre, lacteſcens acre, foliis ferulaceis, flore albo, ſemine lato.* J. B. 3. 2. 188. *Seſeli, paluſtre, lacteſcens.* C. B. P. 162. Prodr. 85. Ic. *Anethum & Pyrethrum umbelliferum.* C. B. P. 148. *Boerh. Ind. alt. Plant.*

Thyſſelinum is from θύω, (*thyo*) to be hot, and σέλινον, (*Selinon*) Apium; that is to ſay, hot Apium.

It is a very acrid Plant, ſo that when I firſt found it in the Ditches, and taſted it, I felt my Mouth and Fauces inflamed. We are to rank it, therefore, among thoſe Plants which are of the moſt acrimonious Nature; and, tho' it may have its Uſe in Medicine, it muſt be with a great deal of Caution. The Roots are aperient and penetrating, and provoke Urine and the Menſes. It grows in watry Places; the Milk is much of the Nature of Scammony, and may be ſubſtituted in its room. *Hiſt Plant. adſcript. Boerhaav.*

TIBERIANUM TORMENTUM. The Colic.

TIBIA. The larger Bone of the Leg. See CRUS.

TIBIÆUS. The ſame as TIBIALIS.

TIBIALIS. An Epithet for ſeveral Muſcles. Thus there is the TIBIALIS ANTICUS.

This is a long Muſcle, fleſhy at the upper Part, and tendinous at the lower, ſituated on the fore Side of the Leg, between the Tibia and the Extenſor Digitorum Longus.

It is fixed above by fleſhy Fibres, in the upper third Part of the external Labium of the Criſta Tibiæ, and of the Inſide of the Aponeuroſis tibialis, or of that ligamentary Expanſion, which goes between the Criſta Tibiæ, and the anterior Angle of the Fibula. It is, alſo, fixed obliquely in the upper Two-thirds of the Outſide of the Tibia, or that next the Fibula.

Thence it runs down, and ends in a Tendon, which firſt paſſes through a Ring of the common annular Ligament, and then through another ſeparate Ring, ſituated lower down. Afterwards the Tendon is fixed partly in the upper and inner Part of the Os Cuboides, and partly in the Inſide of the firſt Bone of the Metatarſus.

The Tibialis Anticus bends the Foot, that is, turns the Point of the Foot toward the Leg; which Motion is performed by the Ginglymoide Articulation of the Aſtragalus with the Tibia and Fibula. It, likewiſe, bends the Leg on the Foot, or hinders its Extenſion. The firſt of theſe Uſes is generally known; and we have an Inſtance of the ſecond, every time we ſtand or walk. When we ſtand, the Feet being turned directly forwards this Muſcle, like a Frænum, keeps the Leg in Æquilibrio, and hinders it from falling backward. This Uſe is ſtill more evident, when we walk backwards.

By its lateral Inſertions in the Os Cuneiforme Maximum it moves this Bone, in particular, over the anterior Extremity of the Os Calcis, by which the Sole of the Foot is turned inwards toward the other. This lateral Situation of its Inſertion is the Reaſon why it cannot bend the Foot directly, without the Help of the anterior Peronæi; neither can it alone keep the Leg in Æquilibrio, when we ſtand on one Foot. *Winſlow.*

TIBIALIS GRACILIS. See PLANTARIS.

TIBIALIS POSTICUS.

This is a long fleſhy penniform Muſcle, broader above than below, ſituated between the Tibia and Fibula on the back Side of the Leg, and covered by the Extenſor Digitorum Longus.

It is fixed above by fleſhy Fibres, immediately under the Articulation of the Tibia and Fibula, to the neareſt Parts of theſe two Bones, principally to the Tibia, reaching to the lateral Parts of that Bone, above the interoſſeous Ligament, which is here wanting.

From thence its Inſertion is extended below the oblique Line or Impreſſion in the Tibia, over all the neighbouring Part of the interoſſeous Ligament, and through more than the upper Half of the internal Angle of the Fibula.

Through all this Space it is fleſhy, penniform, and covered by the Extenſor Digitorum Longus, which ſometimes communicates with it by a middle Tendon, and ſends off an Aponeuroſis to it, which does the Office of a Frænum.

After this it forms a Tendon, which runs down behind the inner Malleolus, through a cartilaginous Groove; and an annular Ligament, paſſing under the Malleolus, is inſerted in the Tuberoſity or lower Part of the Os Scaphoides. This Tendon is ſometimes divided into two, either of which, croſſing a little over that of the Peronæus Longus, is fixed in the Os Cuboides.

When the Tibialis Poſticus acts alone, it extends the Foot obliquely inward. When it acts together with the Gaſtrocnemii and Soleus, it changes the ſtraight Direction of their Motion to an oblique one. When it acts with the Tibialis Anticus, the Sole of the Foot is turned more or leſs directly inward or toward the other Foot. *Winſlow.*

TIBURO.

This is a large ceraceous Fiſh, found in the *Indian* Ocean, which *is ſometimes twenty Feet in Length*, and ten in Thickneſs. In its Head are found three or four bony, inſipid Stones, which may be eaſily ſcraped into Powder. The Stones are reckon'd good for the Stone, and a Difficulty of Urine, ſerving to diſſolve the Stone in the Kidneys and Bladder. *Lemery des Drogues.*

TIFACOUM. Quickſilver. *Rulandus.*

TIFATUM. Sulphur. *Rulandus.*

TIGALA. An *Arabic* Epithet for Sugar. *Caſtellus.*

TIGILLUM. A Tile. According to *Blancard*, a Crucible.

TIGRIS. Offic. Aldrov. de Quad. Digit. 101. Geſn. de Quad. Digit. 936. Jonſ. de Quad. 84. Charlt. Exer. 14. Schw. Quad. 130. Raii Synop. A. 165. THE TIGER.

The Part of this Animal uſed in Medicine is the Fat, which is ſuppos'd to agree in Virtues with the Fat of a Dog. *Dale.*

TILIA.

The Characters are;

The Calyx is pentaphylloidal, the Flower roſaceous, polypetalous, and furniſhed with numerous Stamina. The Ovary has a long Tube, with a globous Apex, and becomes a roundiſh unicapſular Shell, containing oblong Seeds.

Boerhaave mentions five Sorts of *Tilia*; which are,

1. Tilia; fœmina; folio majore. *C. B. P.* 426. *Tourn. Inſt.* 611. *Boerh. Ind. A.* 2. 230. *Tilia.* Offic. *Tilia fœmina.* Ger. 1298. Emac. 1483. *Tilia fœmina major.* Park. Theat. 1407. *Tilia vulgaris platyphyllos.* J. B. 1. 131. Raii Hiſt. 2. 1694. Synop. 3. 473. THE LIME-TREE.

This is a Tree well known, having an handſome Body with a ſmooth Bark, ſpreading its Branches round in a regular manner; the Leaves are broad and roundiſh, with a ſharp Point, ſerrated about the Edges; at the Foot of theſe, in the Summer ſpring out thin leafy Ligulas, of a yellow Colour, from the middle of the back Ribs of which ariſe Stalks about an Inch long, divided into four or five ſhorter ones, each bearing a yellow, five-leaved, ſweet Flower, ſucceeded by a ſmall hoary Fruit about the Size of a Pea. Limes grow every where about Gentlemens Seats, and in Parks, and flower in *July*.

We ſeldom uſe any thing but the Flowers, which are accounted cephalic and nervine, and good for the Apoplexy, Epilepſy, Vertigo, and Palpitation of the Heart. They are put in the compound Peony-water, and the Spirit of Lavender. The *Aqua Florum Tiliæ*, or Water of the Flowers of the Lime-tree, takes its Name from them. *Miller's Bot. Off.*

The ſeminal Leaves of the *Lime-tree*, as *J. Bauhine* obſerves, are generally cut into five Diviſions, as into ſo many Fingers, the extremes and middle one exceeding the reſt in Length, which is a Thing rare and ſingular.

Thalius obſerv'd an Excreſcence, or Tumor, like the Gall of an Oak, in the Roots of old Lime-trees. *Raii H. P.*

It is planted in Walks and Areas, flowers in *June*, and the Leaves and Flowers are uſed. The Leaves are drying and repellent, and provoke Urine and the Menſes. The Flowers are heating and drying, and of fine Parts, diſcutient, and cephalic. *Dale.*

2. Tilia; fœmina; folio minore. *C. B. P.* 426. *Tourn. Inſt.* 611. *Boerh. Ind. A.* 2. 230. *Tilia.* Offic. *Tilia folio minore.* J. B. 1. 137. Raii Hiſt. 2. 1695. Synop. 3. 473. *Tilia.* Offic. *ſive fœcunda Pſeudopiperifera.* Hoff. Cat. Altorff. THE SMALLER LIME-TREE, BAST, or PEPPER-TREE.

It grows in Woods and Hedges; the Flowers are uſed, and agree in Virtues with thoſe of the former. *Dale.*

3. Tilia; foliis molliter hirſutis; viminibus rubris; fructu tetragono. *Raii Synop.* 316.

4. Tilia; folio ſubtus glauco Populi.

5. Tilia; folio magno; ramis erectiſſimis. *Boerh. Ind. alt. Plant.*

The Bark and Leaves of the *Tilia* are drying and repellent; the Mucilage of the Bark is of great Uſe in Wounds and Ambuſtions. *Dodonæus* recommends the Bark chew'd, and apply'd for theſe Purpoſes. The Leaves bruiſed, and ſprinkled with Water,

Water, diſcuſs Tumors of the Feet, and are accounted a ſingular Remedy for the Aphthæ, and flatulent Spaſms in Women with Child; the expreſſed Juice, mixed with Wine, and rubbed hot on the Joints, is good for the ſame ſpaſmodical Affections.

The Flowers are of fine Parts; their Smell is extremely ſweet, and the Water of Uſe in cephalic Affections; it is commended in Palpitation of the Heart, Pains of the Uterus, Stone in the Kidneys, and Concretions of Blood occaſioned by Contuſions. Some mix therewith Powder of Charcoals made of the *Tilia*. The Doſe is an Ounce, or an Ounce and an half; ſome exhibit the ſame againſt the Gripes; and Women uſe it as a Coſmetic.

The Berries, reduced to Powder, are highly commended in the Dyſentery, and other Fluxes of the Belly; the ſame, bruiſed with Vinegar, and put up the Noſtrils, ſtop Bleeding at the Noſe; and ſome of the Berries, ſwallowed, are ſaid to be very effectual for that Purpoſe.

The Antients wrote on the inner Bark of the *Tilia*, called *Philyra*, while it was freſh. *Raii H. P. p.* 1694.

The diſtilled Water of the Flowers is good againſt the epileptic Diſorders of Children, and againſt hypochondriac and cephalic Affections. Externally they are recommended in the Form of a Caraplaſm in a Teneſmus. *Hiſt. Plant. adſcript. Boerhaav.*

The *Tilia* affords us ſome very good Remedies, particularly in the Flowers, by an Infuſion of which in Water, after the manner of Tea, with long and conſtant Uſe, I have known an inveterate Epilepſy perfectly cured. The Water of the Flowers is ſpecific in all Diſeaſes where Pains or Convulſions are predominant; whence it juſtly deſerves the Name of *Polychreſtum*. The middle Bark of the Tree, reduced with Water to a Mucilage, is of incomparable Virtue in mitigating Pains, Heats, and Inflammations; whence it gives immediate Relief in the Pain of the Arthritis and Podagra. *F. Hoffman.*

TILMATA, τίλματα (the Plural of τίλμα, *Tilma*), from τίλλω, to vellicate. Vellications. *Galen, Com.* 3. *in Lib.* κατ. ἰητρ. tells us, that Spaſms affect the Fibres of the Muſcles, which are diſtended to ſuch a Degree, as to cauſe a Rupture in ſome of them; and that theſe Spaſms are, by the more modern Phyſicians, properly called τίλματα, Vellications.

Τίλματα (called, alſo, τιλμάτια and τίλτα) in *Hippocrates, Lib.* περὶ ἐυσχημ. ſignify ſcraped Lint, or Tents of the ſame. Thus, alſo, *Archigenes*, in *Galen, Lib.* 2. τῶν κατὰ τόπων, by τίλμα and τιλμάτιον (*Tilmation*), means a kind of ſcraped Lint, proper for Wounds of the Head, and otherwiſe called μοτὸν τιλτὸν, (*Moton tilton*) or, ſimply, τιλτὸν (*Tilton*); and number'd among the five Kinds of μοτὸς (*Motos*), or Lint.

Τίλμοι (*Tilmoi*), in *Hippocrates, Lib.* περὶ χυμῶν, and 1 *Epid. Sect.* 3. ſignify Vellications of the Bed-clothes, plucking Hairs out of Garments, or picking Motes from the Wall, and ſuch-like Motions as are uſually practiſed in a Delirium, by thoſe who labour under acute Diſeaſes, as a Phrenſy and Peripneumony. Sometime τίλμοι ſignify Vellications or Lancinations of the Parts from acrimonious Humours, or corroding Pus; ſometimes, alſo, Vellications of the Parts by the Patients themſelves, when under a Delirium, as we are informed by *Galen, Com.* 3. *in* 1 *Epid.*

TIMÆI COMPOSITIO AD IGNEM SACRUM VEL CANCRUM. The Name of a Compoſition in *Celſus, Lib.* 5. *Cap.* 22.

TIMARTIRI. This Word occurs in *Nicolaus Myrepſus, Sect.* 1. *Cap.* 150. *Fuchſius*, his Commentator, confeſſes, he don't know what the Author means, unleſs it be burnt Silk.

TIMBO. See GUAIANA.

TIN. Sulphur. *Rulandus.*

TINA. A Bath, of great Service in the Colic.

TINCA. Offic. Schrod. 5. 334. Aldrov. de Piſc. 645. Bellon. de Aquat. 324. Geſn. de Aquat. 984. Charlt. de Piſc. 43. Mer. Pin. 190. Jonſ. de Piſc. 114. Rondel. de Piſc. 2. 157. Salv. de Aquat. 90. Raii Ichth. 251. Ejuſd. Synop. Piſc. 117. Schonf. Ichth. 76. THE TENCH.

It is a mucous, excrementitious Fiſh, which delights in marſhy and muddy Waters. As to its Uſes, it is cut abroad, and apply'd to the Wriſts, and Soles of the Feet, in order to mitigate feveriſh Heats, and to divert the Venom of the Peſtilence; in like manner is it apply'd in Pains of the Head and Joints. Live Tenches, apply'd one after another to the Regions of the Umbilicus and Liver, and kept there till they die, are ſaid to cure the Jaundice; for they contract, it ſeems, a yellow Colour. *Schroder* ſays, that he has ſeen an incinerated Tench, and eſpecially its Tegument, exhibited with Succeſs in the *Fluor Albus*.

TINCAR. See BORAX.

TINCONES. Bubos. *Fallopius de Morb. Gallico.*

TINCTORIA *Arbor*, J. B. is a Tree growing in the Kingdom of *Jenago* in *Ethiopia*, of the Thickneſs of our glandiferous Trees, bearing a Fruit like a Date, from which is extracted an Oil of admirable Virtue. This Oil, mixed with Water, turns it quite of a Saffron-colour, and with the ſame Colour they dye their Cups, and their Caps, which are made of a Contexture of Ruſhes, or Rice-ſtraw; the Oil ſmells like the *Viola Martia*, and taſtes like our Oil; for which Reaſon many uſe it in ſeaſoning their Fiſh, Rice, and other Food. *Raii Hiſt. Plant* 1794. from *M. Thevet.*

TINCTORIUS FLOS. A Name for the *Geniſta*; *tinctoria*; *Germanica.*

TINCTURA. A Tincture.

The Proceſſes of Diſtillation, and that for extracting Tinctures, differ only in this, that the former can take out thoſe lighter Parts only which are able to riſe in Vapour; and the latter, all ſuch Parts as are capable of being ſuſpended in a Menſtruum.

The Management and Rules of Procedure in Tinctures, Elixirs, medicated Wines, Vinegars, Decoctions, and Infuſions, depend upon the ſame Reaſon and Principles; theſe ſeveral Forms differing only in the Fitneſſes of the Materials for Suſpenſion in Fluids of different Conſiſtences, and the beſt manner thence ariſing for drawing them out: The principal Rule in all which is, that the Liquor made uſe of for a Menſtruum, or Vehicle, be more or leſs ſpirituous, as the Ingredients which are ordered in it are of a lighter or more fixed Nature; and the Times of ſtanding in Digeſtion, either hot, or cold, are, alſo, to be proportion'd accordingly.

Under the Denomination of Tinctures and Elixirs are generally included thoſe Things of a volatile, light Texture, which beſt give out their Virtues to ſpirituous Liquors; and theſe are either ſimple or compound. Of the former are the Tinctures of Saffron, Caſtor, Myrrh, Sulphur, Snake-root, and red Roſes; all which are ordered in Liquors, judged ſuitable to their reſpective Textures and Virtues. Saffron is drawn with the Treacle-water in the Intention of an Alexipharmic; but as a Cordial, and for the better Preſervation of its Colour, which ſoon fades with any Acid, Liberty is given to infuſe it, alſo, in Canary, or *French* Brandy. The Tincture of Caſtor is, likewiſe, drawn by a Spirit with equal Eaſe and Readineſs, becauſe both theſe are of a lax Texture, and ſoon open in ſuch Vehicles; but the Myrrh, upon Account of its Tenacity, requires a Mixture of Salt of Tartar with it, and to ſtand for ſome time, previous to its Infuſion in Spirit; by which means its adheſive Texture is broken, and it comes more readily to unite with the Spirit afterwards. Something like to this is ordered with the *Virginian* Snake-root, it being directed to be drawn with the Tincture of Salt of Tartar; but if this Root is broke ſmall in a Mortar, it gives out all its Warmth to a various Spirit; and ſome rather prefer it, becauſe the Tincture of Salt of Tartar gives it a nauſeous urinous Scent, and makes it almoſt intolerably burning in the Stomach; which Quality in itſelf is frequently moderated with Acids, which is a very oppoſite Management to this. The red Roſes are drawn only with hot Water acidulated with Oil of Vitriol, which not only greatly aſſiſts the Intention of an Aſtringent in all Inſtances, as well as this, but, likewiſe, contributes to ſtrike a moſt beautiful red Colour. The Tincture of Poppies become a Compound only by the Addition of ſome Nutmeg; and it agrees with the Roſes in this reſpect, of being greatly improveable in its Colour by Acids, but both would change into a moſt unſightly Green, were Salt of Tartar, or any alkalious Matter to touch them, a Difference very proper to take notice of.

In all compound Tinctures or Elixirs, drawn with a Spirit, and where the Doſe is ſo ſmall, as to be aſſigned in Drops, particular Care ought to be taken not to interpoſe any Ingredients, which are not of proportionable Efficacy with the reſt, howſoever they may agree in Intention. For it is not here as in Diſtillation, where an uſeleſs, or a weak Ingredient may do no Harm; becauſe, in a Tincture, every ſuch one will ſo help to ſate the Menſtruum, that it will be leſs able to take up Things of more Efficacy, and will conſequently be, in the Whole, a weaker Medicine. Thus, in *Mynſicht's* Elixir of Vitriol, tho' Mint certainly comes within the Intention of a Stomachic, and Sage may be allowed to do ſo too; yet, in a Medicine that will not bear Exhibition in a larger Quantity than twenty or thirty Drops for a Doſe, ſuch things are very improperly crouded; for, beſides the Hindrance they occaſion to the Menſtruum in taking up the other more efficacious Ingredients, by ſating it with ſomething from themſelves, if we compute the Share they have in a Doſe, it will vaniſh almoſt to nothing; for here is no more than half an Handful of theſe Things, in a Quantity that makes ſome Thouſands of Doſes; whereas common Experience informs us, that they may be, and frequently are, taken with our common Food, in as large Quantities as they enter into the Whole of this Compoſition, without any Inconvenience. What the Sugar-candy does in this Compoſition is, likewiſe, not eaſy to gueſs or juſtify; and the Oil of Vitriol ſeems to be ordered in too large a Quantity, the Sharpneſs of that neceſſarily making a Doſe ſmall, that the Spices have not a due Proportion in it. But the greateſt Error in this celebrated Medicine conſiſts in the making, when all the Ingredients are digeſted together; for the Oil of Vitriol entirely burns and hardens them, ſo that they not only give out their Virtues the leſs, but, alſo, deform the Whole with a blackiſh dirty Colour; both which Inconveniencies might be avoided by infuſing the Spices in the Spirit alone; and, after that is ſtrained fine, the Oil of Vitriol might be added, which then only gives it a thicker Conſiſtence, and ſomewhat raiſes its Colour.

The ſame is obſervable of the Acid in that Sort of Elixir Proprietatis, which is made with it. If it be put upon the Ingredients with

wi h the Spirit, it unfits them for giving out their Virtues, and will not admit of ſo good a Colour or Conſiſtence, as when put in afterwards.

Theſe Remarks naturally lead us to another Circumſtance, very neceſſary to be regarded in the Extraction of all compound Tinctures; and that is, when the Ingredients are ſo different in Texture, that ſome open and fate the Menſtruum much ſooner than others, they ought to be drawn ſeparately, with a proportionable Part of the Menſtruum, becauſe, otherwiſe, thoſe which with moſt Difficulty give out their Virtues, will have very little or no Share in the Compoſition. Thus, in the common *Elixir Proprietatis*, though there are but three Ingredients, yet they are ſo unequal in their Fitneſs for Solution, that if they are put in together, the hardeſt, which is the Myrrh, will, in a good meaſure, be loſt; becauſe the Spirit will be very ſoon loaded with the other two, and, conſequently, become leſs able to take up the Myrrh. If, therefore, they are all infuſed in their proper Shares of Spirit, they will be all eaſily diſſolved; and when put together afterwards, with the Addition of the Acid, they will make a moſt beautiful high-coloured Tincture, almoſt of the Conſiſtence of a Syrup. To this Rule the *Elixir Proprietatis* of *Helmont* hath a particular Regard, where the Aloes and Saffron, which are of the looſeſt Texture, are diſſolved together, and the Myrrh ſeparately from them both, the ſeveral Tinctures being at laſt united.

Thus, likewiſe, in the compound Tincture of Myrrh, if the Myrrh be firſt diſſolved, the Aloes, with equal Eaſe, will afterwards be taken up; but if they are put in together, the Aloes loads the Spirit ſo ſoon, that the Myrrh will be much longer in Solution. And in all the liquid Laudanums, if the Spices are firſt drawn out, the Opium will ſoon diſſolve afterwards; but if the Opium be put in with them, they will give out their Virtues to great Diſadvantage. Thus, alſo, in the *Elixir Salutis*, if the Seeds, Liquorice, and Raiſins, were added, after the harder Ingredients had ſtood ſome time in the Spirit, the Medicine would be the better, but theſe are Circumſtances which very few Compounders will be exact enough to obſerve.

The uſual Intentions, for which Tinctures are ordered in common Practice, are thoſe of Cephalics, Stomachics, or Cathartics. The Cephalics take in oleous and aromatic Simples, and ſuch as are called for in nervous Affections; the Stomachics receive the ſame things in Conjunction with Bitters; the Cathartics, ſuch as are appropriated to that Diſtinction by their purgative Qualities. In all nervous Caſes, the odorous Simples are beſt brought into Tincture with ſpirituous or vinous Liquors, as they moſt readily give out their Virtues to them; and this is beſt done cold, or, when Heat is required, in cloſe Veſſels, to prevent Exhalation and Loſs of the better Parts. Tinctures, alſo, of Stomachics, are beſt ordered without Heat, and commonly in Liquors moderately ſpirituous, as the ordinary White-wines. And Cathartics, whether reſinous or ſaline, for extemporaneous Occaſions, want nothing more than hot Water, as in making common Tea, to draw out their Virtues. The Proportions of Ingredients in all theſe Caſes cannot be adjuſted, but by Examples, and Experience of the Patient's Strength; but, for Cephalics and Stomachics, it is a certain Rule, never to fate a Liquor with Ingredients beyond what is agreeable to the Palate, for an irkſome Cordial, or Stomachic, almoſt implies an Abſurdity; tho' in hyſteric Affections, and where the fetid Simples are required, the Caſe is quite otherwiſe.

In the Exhibition of the officinal Tinctures of any Intention; all thoſe which are ſo fated with reſinous, or gummy Simples, that they turn milky in common Water, are, in a more agreeable and tightly manner, directed in Wine, where the Circumſtances of a Patient will admit of it; and, for Bitters in particular, made with a vinous Liquor, they are much better directed between the Times of Breakfaſt and Dinner, or about an Hour before the latter, than faſting, which was formerly the cuſtomary Way, becauſe they then leſs affect the Head.

A cordial, or cephalic Tincture for preſent Occaſions, is very readily made; and now occurs frequently in extemporaneous Preſcription, with the *Species Diambræ*, and ſome generous White-wine. In hyſteric and hypochondriacal Affections, the Root of Caſſamunair, black Hellebore, and others of the ſame Tribe, are conveniently directed in compound Briony-water, or Water of Penyroyal; and, for a Stomachic, Centaury-flowers, Gentian-root, Galangal, the Peels of *Seville* Oranges, and other Things of like Properties, may be drawn with any White-wine. All theſe are to be varied in the Proportion of the Ingredients to the Strength of the Liquor, and the Quantities for a Doſe, according to the ſeveral Circumſtances of a Patient. *Quincy's Pharmaceutical Lectures.*

TINCTURA ANTIMONII ACRIS SIMPLEX. The ſimple acrid Tincture of Antimony is directed to be made in the *Brandenburgh* Diſpenſatory, by digeſting the *Scoria* of the Martial *Regulus* of Antimony juſt made, and hot, in highly rectify'd Spirit of Wine. Another acrid Tincture of Antimony, called the *Reguline Tincture*, is made by digeſting equal Parts of the Martial *Regulus* of Antimony detonated with an equal Quantity of Nitre, in highly rectify'd Spirit of Wine.

It is ſaid, that neither of theſe take up much from the Antimony, but that all their Virtues are borrowed from the Nitre rendered alcaline and acrid, by being fuſed with Antimony.

Theſe Tinctures, given in a proper Vehicle, and a conſiderable Doſe, are ſaid to bring away the ſerous Humours of cachectic Patients.

TINCTURA ASTHMATICA.

Tincture for an Aſthma.

Take Roots of Elecampane, Florentine Orris, Seeds of Aniſe, Caraway, Liquorice, of each two Drams; Leaves of Carduus Benedictus, two Handfuls; ſtoned Raiſins, one Pound; Sena, ſix Ounces; Aniſeed-water, ſix Pints. Let them all digeſt four Days; then ſtrain the Liquor, and keep it for Uſe.

The Carduus here nauſeates the Medicine, and contributes but little to its Efficacy; and, therefore, is better left out. This may be taken two or three Spoonfuls, going to Bed; and as much next Morning, according to the Strength of the Patient; and if it be long continued in corpulent Habits, it is ſaid to do much Good.

TINCTURA AURI. See AURUM.

TINCTURA BENZOINI. See BENZOINUM.

TINCTURA BEZOARTICA.

The Bezoartic Tincture.

Take Roots of Elecampane, Angelica, Zedoary, *Virginia* Snake-root, of each one Ounce and an half; Saffron, one Ounce; Myrrh, Cinamon, dry'd Citron-peels, of each ſix Drams; Leaves of Scordium and Rue, of each half an Handful; *Venice* Treacle, three Ounces; Opium, two Drams; rectify'd Spirit of Tartar, fifteen Ounces; Spirit of Vitriol, three Ounces; Spirit of Elder, and Juniper-berries rectify'd, of each eighteen Ounces. Digeſt them together for ſome Days in a Sand-warmth in a cloſe Body, then filtre and diſſolve in it Salt of Amber, one Ounce; and of Camphire, two Drams; which keep cloſe-ſtopt for Uſe.

This is an admirable Alexipharmic, and very convenient to give in extemporaneous Draughts or Mixtures, from two Drams to one Ounce in a Doſe. It has in it all that can be expected, or wiſhed for, to anſwer the Intentions of a Cordial and Cephalic. Where, therefore, a Perſon is almoſt ſpent with ſtruggling under a Fever, or the Nerves are even convuls'd, it is very proper to be given. And in the Beginning, alſo, of an acute Diſtemper, it will, with proper Diluters, as ſoon as any thing, raiſe a Sweat. The Camphire and Salt of Amber are admirable Ingredients, and in very few officinal Preſcriptions beſides; though the latter is often in occaſional Practice. This is not much known in the Shops, but highly deſerves Encouragement, being preferable to moſt of thoſe in Uſe.

TINCTURA CANTHARIDUM. See CANTHARIDES.

TINCTURA CASTOREI. See CASTOR.

TINCTURA CINNAMOMI.

Tincture of Cinnamon.

Take Cinnamon, two Ounces; rectify'd Spirit of Wine, one Quart. Digeſt for four Days; then add Sugar, half a Pound; Roſe-water, one Quart, Ambergriſe half a Scruple, and Muſk four Grains.

It is preferable to the Spirit in all Fluxes and Relaxations, as it abounds more with the rough aſtringent Parts of the Spice. It is, alſo, as pleaſant to take, and from the Sweets in it, where they do not offend, is much more cardiac. The Doſe is from half an Ounce, to two or three Ounces.

TINCTURA CORALLI. See CORALLIUM.

TINCTURA CORTICIS.

Tincture of the Bark.

Take of the Bark in Powder four Ounces; put it into a Bolt-head; add to it rectify'd Spirits of Wine, twelve Ounces; fit it for Circulation, and ſet it in a gentle Sand-heat four or five Days, ſhaking it often; then decant the Spirit carefully into a Phial for Uſe.

It is beſt given in red Wine, from twenty to one hundred Drops; and to be repeated every four Hours between the Fits, or oftener, according to the Urgency of the Symptoms.

TINCTURA CROCI. See CROCUS.

TINCTURA EUPHORBII.

Tincture of Euphorbium.

Put into a Phial what Quantity you pleaſe of pulveriz'd Euphorbium, and pour upon it Oil of Tartar made *per Deliquium*,

quium, about four Fingers high; ſtop the Phial, and place it in Digeſtion upon hot Sand, and leave it there for two Days, and there will be made a deep-yellow or rediſh Tincture; ſtrain it, and keep it in a glaſs Bottle.

This is very attenuating and inciſive, and is powerful in cleanſing old foul Ulcers, carious Bones, and callous Lips of Wounds; and is good, alſo, to diſſolve ſcrophulous Tumors, and very obſtinate Indurations of the Glands.

TINCTURA FERRI. See MARS.

TINCTURA GUAIACI. See GUAIACUM.

TINCTURA HELLEBORI. See HELLEBORUS.

TINCTURA HIERÆ PICRÆ. See HIERA PICRA.

TINCTURA GUMMI LACCA. See JUJUBA INDICA.

TINCTURA MARTIS AUREA. See MARS.

TINCTURA MARTIS GLAUBERI. See MARS.

TINCTURA MARTIS MYNSICHTI. See MARS.

TINCTURA MARTIS CUM SPIRITU SALIS. See MARS.

TINCTURA MELAMPODII. See HELLEBORUS.

TINCTURA MELLIS. See MEL.

TINCTURA METALLORUM. *Tincture of Metals.* I have already given the Manner of preparing this under the Article *Metallum*, from the Memoirs of the Royal Academy, which ſee. But *Quincy*'s Preparation is different, and is as follows:

Take of Regulus Martis, half a Pound; of Spittle Duſt, (which is the Scoria that falls from hot Plates of Copper, quenched in Water) four Ounces (or the like Quantity of Caput Mortuum of the Spirit of Verdegriſe); of Saltpetre, two Pounds; of Tartar, half a Pound. Powder and mix them well; and put them into a red-hot Crucible by Spoonfuls: After it has ſtood melting half an Hour, remove it from the Fire, and powder it in a clean warm Mortar. Before it attracts the Air, return it into a Matraſs, and add two Pounds of tartarized Spirit of Wine: Make a circulating Veſſel of the Matraſs, and let it digeſt two Days. When cool and ſettled, decant the Liquor by Inclination.

It is reckoned an efficacious Alterative in all chronic Caſes. The Doſe is from twenty to an hundred Drops.

TINCTURA MYRRHÆ. See MYRRHA.

TINCTURA NITRI.

Tincture of Nitre.

Take of the Nitrum fixatum, (deſcribed in *Quincy*) one Pound; melt it in a Crucible, with a ſtrong Heat, for three or four Hours; then put it into a warm Mortar; powder it, and, whilſt warm, pour upon it half a Pound of tartarized Spirit of Wine: Set the Mixture in a Matraſs upon warm Sand, gradually increaſing the Fire, till the Spirit of Wine ſimmers; and ſo continue for two or three Hours, in which time the fixed Nitre will have communicated its Tincture to the Spirit of Wine: Decant, and put on more, and digeſt, as long as it yields any more Tincture.

This operates both by *Diaphoreſis* and Urine, but principally the latter Way. It is accounted a great Purifier of the Blood, and a good Antiſcorbutic. Its Doſe is from twenty to ſixty Drops.

TINCTURA PARALYTICA.

Tincture againſt the Palſy.

Take *Spaniſh* Flies in Powder, two Ounces; Seeds of Biſhopsweed, ſix Drams; rectified Spirit of Wine, three half Pints. Let them digeſt together for ſome Days in a Sand Heat, and then decant, or filtre the clear Liquor from the Ingredients.

This is deſigned for Embrocations in Numbneſs, and for paralytic Limbs; in which Caſes it is a notable Stimulus; and, if poſſible, will rouze and ſtir the almoſt inſenſible and ſtupefied Fibres, and occaſion a proper Derivation of their Fluids. If much rubbed into the Part, it is ſharp enough to excoriate; but for inward Uſes, it is not to be meddled with, without Hazard of Stranguries, and other Diſorders of the Bladder.

TINCTURA PAPAVERIS COMPOSITA.

Compound Tincture of Poppies.

Take of the wild Poppy Flowers, one Pound; of Nutmegs ſliced, three Drams; of white Sugar, two Ounces; of *French* Brandy, four Pounds. Draw out the Tincture by a gentle Heat.

TINCTURA REGALIS.

The Royal Tincture.

Take of Copper, in little Pieces, two Ounces, put it in a Crucible, and ſet it in a melting Furnace; when it is red-hot, put to it of *Regulus Jovis* (in groſs Powder) fourteen Ounces, let them melt well together the Space of a Quarter of an Hour; then caſt them into a warm greaſed Cone; when cold, beat them into a Powder, which muſt be put (by a Spoonful at a time) into double its Weight of melted Salt of Tartar; when it is all in, ſhut the Door of the melting Furnace, and keep it in the ſtrongeſt Fire can be given it, for two or three Hours: Then take it from the Fire, and pour it into a clean warm Mortar; beat it to Powder, whilſt warm; and, before it attracts any Air, put it into a Matraſs, where there is one Pint of tartarized Spirit of Wine: Lute it as in the *Tinctura Antimonii*; and in all things proceed as in that Tincture.

Some are ſo fond of this, as to cry it up for an univerſal Medicine: And indeed its Deſerts are great; for it is very efficacious in all chronic Diſeaſes. It is ſudorific and diuretic. Its Doſe is from ten to fifty or ſixty Drops. In the room of two Ounces of Copper, there may be uſed two Ounces and an half of the Scoria of Copper, and the Tincture will be more beautiful. Some are of Opinion, that the emetic Quality of Antimony is not to be deſtroyed, ſo as not to return again; but if theſe Tinctures are kept ever ſo long, they will not prove emetic.

TINCTURA REGIA.

The Royal Tincture.

Take Muſk, half a Scruple; Civet, five Grains; Balſam of Peru, twelve Drops; Oil of Cloves, four Drops; of Rhodium, two Drops: Drop theſe upon half a Dram of Salt of Tartar, and mix them well together; then pour upon the Maſs, rectified Spirits of Wine, two Ounces; and let them ſtand in a Heat equal to that of the Sun, in a cloſe Veſſel, many Days; and afterwards pour off the clear Spirit by Decantation.

This is fit only to be kept in Readineſs to flavour any cordial Dram, that ſuch things are proper and required in, and is as good for this Purpoſe, as can well be contrived: The leaſt Drop is ſufficient for many Ounces of a Liquor. This is a Preparation of *Le Mort*.

TINCTURA RHABARBARI.

Tincture of Rhubarb.

Take of Rhubarb, one Ounce and an half; of the leſſer Cardamom-ſeeds and Saffron, of each two Drams; of Liquorice-root, half an Ounce; of *French* Brandy, one Pint; and make into a Tincture.

This is given for the ſame Intention as the Root.

TINCTURA RORIS SOLIS.

Tincture of Sun Dew.

Take of Ros Solis, or Sun Dew, four Handfuls; Cinnamon, Nutmegs, Mace, Cloves, Ginger, of each one Ounce; Muſk, five Grains; Spirit of Wine, one Gallon: Digeſt all together twenty Days; and then diſſolve in the ſtrained Tincture, of Loaf Sugar, one Pound; and put up in a cloſe Veſſel for Uſe.

This is a warm high Cordial, and a good Cephalic, eſpecially in cold Conſtitutions: It heats the Blood, and quickens its Motion, and greatly recruits the animal Spirits. For all theſe Reaſons it contributes to what it is moſt celebrated for, the Cure of Impotence, and a Provoker to Venery.

TINCTURA ROSARUM RUBRARUM.

Tincture of Red Roſes.

Take half an Ounce of Red Roſe Leaves, well cleared of the white Heels, and thirty Drops of Oil of Vitriol; pour upon them, in a glazed earthen Veſſel; two Pints and an half of boiling Spring-water; and let them ſtand cloſe covered for three Hours; then ſtrain off the Liquor; and put to it three Ounces of fine Sugar-candy.

In the making, moſt drop in the Oil of Vitriol, after the Water is poured upon the Roſes.

TINCTURA SACRA. See HIERA PICRA.

TINCTURA SALIS TARTARI HARVEYANA. See TARTARUS.

TINCTURA SALIS TARTARI HELMONTIANA. See TARTARUS.

TINCTURA SCAMMONII. See SCAMMONIUM.

Tinctura Serpentariæ Virginianæ.
Tincture of the Virginia Snake-root.

Take of *Virginia* Snake-root powdered, two Ounces; of the Tincture of Salt of Tartar, fixteen Ounces. Digeſt ſo, as to draw out a Tincture.

It is convenient enough to thoſe who cannot take it in Subſtance; and may be given from one to three Drams in any proper Liquor.

Tinctura Stomachica Amara.
The bitter Stomachic Tincture.

Take Gentian-root, and Orange-peels dried, both cut very ſmall, of each one Pound; pour upon them, into a glaſs Body, rectified Spirits of Wine, one Gallon and an half: Let them ſtand cloſe covered, in a very mild Warmth, for ſome Days; then preſs out the Spirit ſtrongly, and let it fine down for Uſe.

The Peels muſt be of the moſt fragrant *Seville* Oranges, cleared of the White, and carefully dried. This makes a Tincture not to be known from ſeveral which are ſo extravagantly cried up in Empirical Advertiſement, and is the beſt that can be made, notwithſtanding thoſe Boaſters talk of ſo many Ingredients in theirs; which is only to put a Blind upon the Ignorant. To this, Centory, and many things of the like kind, might be added; but they would rather clog the Medicine, than increaſe its Virtues. This is very conveniently kept in the Shops, to make the bitter Draught *extempore*, with any kind of Wine, or other Vehicle. From fifteen to ſixty Drops is ſufficient for a Doſe of two or three Ounces. It is, alſo, very conveniently added to Steel-wine, as Bitters are often joined with it. It has all the Virtues of the common Bitters, and warms and ſtrengthens the Stomach; but anſwers that End much better when joined with a little Acid, which makes a Subaſtringent of it not much unlike the *Elixir Vitrioli*; one Ounce of *Spiritus Sulphuris per Campanam* would be enough for a Pint of this Tincture, and make it of a more beautiful Colour, and pleaſanter to take.

Tinctura Succini. See Ambra.

Tinctura Sulphuris.
Tincture of Sulphur.

Beat of the Liver of Sulphur, (while it is warm) four Ounces, in a warm Mortar; put it preſently into a Matraſs; and to it Spirit of Wine, one Pint; ſet them in Digeſtion for twenty-four Hours, and there will be a very red Tincture, which keep in a Phial well ſtopped, for Uſe.

Canary Wine is the beſt Vehicle to give it in. Its Doſe is from ten to forty Drops.

Tinctura Tartari Tartariſati. See Tartarus.

Tinctura Theriacalis.
The Alexipharmic Tincture.

Take of *French* Brandy, and the beſt Vinegar, of each one Quart; of *Venice* Treacle, and Mithridate, of each half a Pound; digeſt them in a gentle Heat, and ſtrain out the Tincture for Uſe.

It has all the Virtues of the Treacle; and, by the Help of the Vinegar, will ſometimes procure a Diaphoreſis, where that fails. In ſhort, it is an excellent Alexipharmic, and well deſerves the firſt Rank in Practice. It may be given from two Drams to two or three Ounces with any convenient Vehicle, or by itſelf. This may, alſo, be enticed down with many Children, who cannot be prevailed upon with any other Form: They may take from one Dram to half an Ounce. In Fevers, if no other Medicines of the ſame Intention are uſed, it ought to be repeated every four or ſix Hours, according to the Exigency of the Caſe, till a Sweat riſes.

Tinctura Terræ Japonicæ.
Tincture of Japan *Earth.*

Powder finely four Ounces of *Japan* Earth; of Cinnamon, one Ounce; of *Peruvian* Bark, one Ounce and an half; Muſk and Ambergriſe, of each ſix Grains; rub the two laſt with Sugar-candy, one Ounce: Put them all into a Matraſs; and put to them Spirit of Wine, twenty-four Ounces; make of the Matraſs a circulating Veſſel; lute well the Juncture; ſet it upon warm Sand, to digeſt, for four or five Days, ſhaking it about two or three times a Day; then ſet it by to ſettle; and, by gentle Inclination, pour it into a Phial for Uſe.

TIN

This is of good Service in all Defluxions, Catarrhs, Fluxes of the Belly, Dyſentery, and Overflowing of the Menſes; and even in a Gonorrhœa and old Gleets, where the Virulence has been already conquered. It is, alſo, ſaid to be a good Succedaneum to the Bark, and that it will cure Intermittents. Its Doſe is from half a Spoonful to three or four, in rough Wine, or any other proper Vehicle.

Tinctura Veneris.
Tincture of Copper.

Take Verdegriſe, one Dram; Spirit of Sal Ammoniac, and rectified Spirit of Wine, each half an Ounce; let them ſtand until they are of a deep Sky-colour.

This is not fit for any inward Uſe; for it offends the Stomach, and provokes to Vomiting; but it makes an admirable Injection for a Gonorrhœa; and if Care be taken, and Skill enough acquired to know when the Infection is only in the Urethra, a Perſon may be ſoon and infallibly cured with it. But it is adviſeable, that Beginners be not too buſy with it.

Tinctura Viperarum Compoſita.
Compound Tincture of Vipers.

Take of Flowers of Sulphur, one Pound; crude Antimony, four Ounces; grind them to a fine Powder; put it into an earthen Diſh, and ſaturate it with Oil of Sulphur, made by the Bell, (or Oil of Vitriol) four Ounces; put it into a Retort, and pour gradually upon it, of ſweet Spirit of Nitre, one Pound; place the Retort in a ſand Furnace, and draw off the Spirit. Into one Pound of this Spirit put two Ounces of dried Vipers; (cut into ſmall Pieces) let them digeſt forty-eight Hours in a Matraſs; when cool, ſtrain it thro' an hair Cloth. Return the Menſtruum into a Matraſs, adding of Cochineal, Saffron, and Virginia Snake-root, of each two Drams; let them digeſt forty-eight Hours; then decant the clear Tincture.

This is ſaid to be an excellent Diaphoretic; and in the *London* Sickneſs 1665. it was much uſed with Succeſs. Its Doſe is from ten to fifty or ſixty Drops, in *Canary* or Plague-water.

Tinctura Viridis.
The green Tincture.

Take of Verdegriſe, half an Ounce; of yellow Arſenic, ſix Drams; of Alum, three Drams: Boil them together in one Pound of White-wine, to the Conſumption of half the Quantity; and, after it is cold, add to it of Roſe and Plantain-water, of each ſix Ounces.

This hath not been received by the College, until the Diſpenſatory before the preſent; and in that, Nightſhade-water was ordered, where that of Plaintain is here ſubſtituted, becauſe that is not now directed to be made amongſt the ſimple Waters.

TINDA *parva*. H. M. *Arbor Malabarica, baccifera, cortice albicante, glomerato flore*. D. Syen. It is a tall Tree, growing in ſandy Places, in the Country of *Malabar*.

The Root bruiſed, and uſed by way of Lotion, is good for the Morbus Sacer; the ſame, bruiſed, is applied to Impoſtumes. The Leaves, in Decoction, are uſed in Fomentations, or Caraplaſms, for eaſing all Kinds of Pain, and are ſerviceable to Women in Childbed. *Raii Hiſt. Plant.*

TINEA. See Acnor.

TINEARIA. A Name for the *Stœchas Citrina anguſtifolia*.

TINIARIA, in *Marcellus Empiricus*, C. 17. is the *Polygonum*.

TINKAR. Borax.

TINNITUS AURIUM. A Noiſe in the Ears, like that of a Bell.

TINNUNCULUS. A Species of Hawk mentioned by *Aldrovandus*.

TINTINNABULUM. The Uvula. *Veſalius*.

TINUS

The Characters are;

The Calyx is double, the lower trifid, the upper quinquefid, and both monophyllous. The Flower is monopetalous, rotated, quinquefid, tabulated for a ſhort way below, and furniſhed with five Stamina, which ariſe from the Inſide of the Tube of the Flower. The Ovary in the Bottom of the Calyx is furniſhed with a long, triangular, ſcabrous Tube, and becomes a Fruit like an Olive, umbilicated, and full of a ſingle pear-ſhaped Seed.

Boerhaave mentions three Sorts of *Tinus*, which are;

1. Tinus;

1. Tinus; prior; Clusii. *Tourn. Inst.* 607. *Boerh. Ind. A.* 2. 225. *Laurus Tinus.* Offic. Ger. 1224. Emac. 1409. *Laurus Tinus Lusitanica cærulea bacca.* Park. Theat. 206. *Laurus sylvestris corni fœminæ, foliis subhirsutis.* C. B. P. 461. *Lauri Tini sylvestris primum genus.* J. B. 1. 418. WILD BAY.

It is a Native of *Portugal*, and flowers in *July* and *August*. The Berries, which are used, being taken inwardly, purge by Stool, with great Disorder and Perturbation of the whole Body. *Dale* from *Parkinson*.

2. Tinus; II. *Clus. H.* 49. *Lugd.* 204. *Laurus sylvestris, foliis venosis.* C. B. P. 461.

3. Tinus; III. *Clus. H.* 49. *Lugd.* 204. *Laurus sylvestris, folio minore.* C. B. P. 461. *Boerh. Ind. alt. Plant*

The *Tinus* is a poisonous Plant; the Berries, held in the Mouth, soon burn the Fauces; they are sometimes exhibited in the Dropsy with singular Success, being a very strong Cathartic; but I would not advise the internal Use of this Plant. *Hist. Plant. adscript. Boerhaav.*

TIPI. A shrubby Species of *Alliaria* growing in *Brasil*, with a whitish Flower, and a black round Fruit, like a Plum. *Pis. Raii Hist. Plant. Index.* There are no Virtues ascribed to it.

TIPIOCA. A Sort of Cremor prepared of the MANIHOT, which see.

TIPSARIA. Barley-water, from *Ptisana*, *Rulandus* and *Johnson* write it *Tapsaria. Castellus.*

TIPULA. A kind of Water-fly, resembling a Spider. It has six long Legs, which it extends upon the Water, and walks upon them without sinking; its Body is of an oval Shape, and a whitish Colour; its Wings are silver-coloured, its Eyes black, and its Tail sharp-pointed.

It is of a discussive Virtue, being outwardly applied. *Lemery des Drogues.*

TIRUCALLI. *H. M.* A Name for the *Tithymalus Indicus frutescens.*

TITANOKERATOPHYTON, from τίτανος Lime, or Plaister, and KERATOPHYTON, which see. A Name given by *Boerhaave* to a very large marine Plant, found near the Coast of *Norway*, resembling the *Keratophyton*, except that it is incrusted, as it were, with a calcarious or gypseous Substance. *Boerhaave* mentions twenty-four Species of this Plant, none of which have any medicinal Virtues ascribed to them at present, that I know of.

TITANOS, τίτανος, *Calx*, Lime; τίτανος is expounded in *Erotian* by ἡ κονία, Lime, or a Lixivium prepared thereof; τίτανος ἡ ἀνάσβεστος is Quicklime, commonly called ἄσβεστος (*Asbestus*), and advised by *Galen, de C. M. S. L. Lib.* 1. *Cap.* 4. among dry Depilatories. *Titanos* in *Rulandus* is Lime of Gypsum. *Foesius. Castellus.*

TITHYMALOIDES.

The Characters are;

It is a Species of Tithymalus; the Flower is monopetalous, anomalous, and shaped like a Shoe.

Boerhaave mentions two Sorts of *Tithymaloides*, which are;

1. Tithymaloides; frutescens; folio myrti amplissimo. *T.* 654. *Tithymalus Curassavicus, myrtifolius, flore coccineo mellifero.* Par. Bat. H. R. D.

2. *An* Tithymaloides; frutescens; foliis Nerii. *Plum. T.* 654. *Boerh. Ind. alt. Plant.*

There are no medicinal Virtues ascribed to this Plant at present, that I know of.

TITHYMALUS.

The Characters are;

The Root is fibrous or tuberous; the Leaves are alternate, oblong, intire, and a few of them orbicular. The Pedicle ends in a gross Body, hollow like a Calyx, to the Top of whose Lobes grow four or five anomalous Petals, often semilunated, and excavated, representing a tetrapetaloidal Flower, with almost lunar Segments, surrounded with two Leaves, instead of a Calyx. From the very Bottom of the Cavity of the Calyx, at the Sides of the Pointal, arise four, five, or more Stamina, longer or shorter, with their Testiculi. From the Centre of the Calyx arises a long Style, or Pointal, bearing a triangular or hexagonal tricapsular Ovary, from whose Centre arises a long, triple Tube, with a bifid, scabrous Apex; this Tube runs out into so great a Length, that the Ovary appears almost in the Middle of the Pointal. Every Part of the Plant abounds with Plenty of Milk.

Boerhaave mentions forty-four Sorts of *Tithymalus*, which are;

1. Tithymalus; latifolius; Cataputia dictus. *Tourn. Inst.* 86. *Boerh. Ind. A.* 255. *Cataputia minor, Lathyris.* Offic. *Cataputia minor.* Raii Hist. 1. 866. *Lathyris major.* C. B. Pin. 293. *Lathyris major hortensis.* Theat. 191. *Lathyris, sive Cataputia minor* Ger. Emac. 503. J. B. 3. 880. *Esula major.* Rivin. Tet. Irr. Rupp. Flor. Jen. 219. GARDEN SPURGE.

It is frequently found in Gardens, and the Parts in Use are the round oblong Seeds, or Grains, which are bigger than a Pea, and include under a corticous Pellicle a white, pinguious Nucleus, or Kernel, of a sweetish, acrid, and nauseous Taste, and a violent cathartic Quality; but those Grains, as well as those of the other Species of *Tithymalus*, are seldom used.

Twelve or fourteen Grains, bruised, and taken in Wine, put the whole Body in a Commotion, purge the Belly, evacuate Bile and Phlegm, potently provoke Vomiting, and attract Phlegm, Bile, and Melancholy.

This Plant, the first Year of its springing from Seed, grows scarce to be two Foot high, with a thick reddish Stalk, beset with long and narrow bluish-green Leaves, and so continues, without running into Branches, till the next Year, when it rises to three or four Foot high, with many Branches toward the Top; on which, at every Division, grow broader and somewhat triangular Leaves, set on without Footstalks: The Flowers are small and yellow, standing in round hollow Leaves, which encompass the Stalk like a Cup, and these are followed by three square Seed-vessels, containing three oblong Seeds. The whole Plant is so full of Milk, that, if you cut off a Branch, it will run out by Drops in some Quantity; which Milk is of a hot, fiery, burning Taste, inflaming the Mouth and Throat for a great while. This Spurge grows in Gardens, where it springs up of its own sowing, dying after it has brought its Seed to Perfection.

This is much of the same Nature with the *Cataputia major*, but is rather stronger, and more violent, in its Operation; and therefore only given by bold adventuring Empirics. The Milk is good to take away Warts. *Miller's Bot. Off.*

The Whole of this Plant abounds with a milky, highly acrid Juice, which operates violently both by Vomit and Stool. It is classed among the Poisons which are manifestly acrid and caustic, which create a Gangrene and Putrefaction, and whose Effects are to be opposed by aqueous, tepid, somewhat acrid, and pinguious Substances; as, also, by Preparations of Honey. See *Boerhaave, Institut.* 1137. *Forest. Obs. Med. L.* 1. *Obs* 23. *Joel. T.* 2. Its most specific Remedy or Antidote is said to be St. John's-wort. See *Kircherus, Mund. Subt. T.* 2. and *Bauhine* from *Matthiolus* informs us, that if any one intends to destroy the Hairs of his Eyebrows and Forehead, he may mix the Juice of this Plant with Oil, and anoint them with it in the Sun, but in such a manner, that no Part of the Preparation touch his Eyes and Face, since such Parts are immediately inflated, become red, and resemble a Leprosy. The Juice of the Garden-spurge removes the Tooth-ach, when put into the Cavity of the affected Tooth; but due Care must be taken to fortify the Gum by means of red Wax; for which reason it ought to be principally used in removing superfluous Hairs, Warts, and Serpigos. Impudent Beggars generally use to spoil and deform their Skins by means of this Juice, in order the more effectually to move the deluded Spectator to Compassion. *Bauhine*, also, informs us, that, in order to purge by Stool, *Fernelius* orders three or four Leaves of Garden-spurge to be exhibited in pinguious Broth. *Dioscorides*, also, observes, that the Leaves of this Plant boiled with a Fowl, or Pot-herbs, produced the same Effect. If Fishes eat the Leaves and Seeds of this Plant, when thrown into Ponds and Lakes, they turn up their Bellies as if they were dead, so that they may be catched by the Hand, and will revive, when put into other Water, according to *Bauhine* from *Hollerius*. Twelve or fourteen Seeds of Garden spurge, bruised and drank in Wine, throw the whole Body into Commotions, purge by Stool, eliminate Phlegm and Bile, powerfully vomit, and procure an Expectoration of Phlegm, Choler, and Melancholy. *Morison* from *Tragus* affirms, that Pills prepared of the Milk of this Plant, Vinegar, and aromatic Substances, are beneficial to dropsical Patients. *Dioscorides* informs us, that six or seven of the Seeds taken in Pills, Figs, or Dates, purge by Stool, and evacuate Bile, Phlegm, and Water, but that the Patient must drink cold Water after them. According to *Pliny*, "twenty Seeds of "Garden-spurge, drank in pure Water, or Hydromel, cure "dropsical Patients, and evacuate Bile. Those who intend to "be violently purged, take them with the Husks; but, as these "are found offensive to the Stomach, it is thought proper to "take them with Fish, or Broth prepared of Fowls." *Bauhine* from *Matthiolus* informs us, that ten or twelve Seeds of Garden-spurge, freed from the Husks, are beneficially exhibited in order to excite a violent Vomiting in those who have swallowed Love-potions, or other bewitching Things. But as there is no Scarcity of secure Emetics and Purgatives in the Materia Medica, there can be no Reason for prescribing the Seeds of this Plant, with which presumptuous Quacks have killed many, thinking to distinguish themselves from the knowing and skilful Physicians. Those who have, perhaps, without any Injury, swallowed any of these Seeds, owe their good Fortune rather to the Smallness of the Dose, their Stomachs abounding with acid Juices, a previous Use of oleous Liquors, the using Things of a like Nature immediately after, or the natural Vigour of their Constitutions, than to the safe and innocent Nature of such a Medicine. That in some Patients the Seeds of Garden-spurge should operate by Stool, and in others by Vomit, seems to be owing to the particular Habit and Temperament of those who use them; since it is certain, that some have Bodies more disposed to one particular kind of Evacuation, than others; or to the Juices or Remains

of the Aliments, lodged in the Stomach, and promoting one or other of the Evacuations by means of the Purgative. Perhaps this Circumstance has laid a Foundation for the Story which prevails among superstitious old Women, who assert that, if the Seeds are stript downwards, they purge by Stool; whereas, if they are stript upwards, they evacuate by Vomit. *Ettmuller* informs, "that the "Seeds of Garden-spurge are purgative. Thus, for Instance, if "from ten to twelve or fifteen Seeds are bruised and taken in a "poached Egg, they purge violently and instantaneously by "Stool. If the Intention is, that they should purge strongly, "they should be well chewed; but if they are intended to vomit, "they are to be swallowed whole." See *Bauhine*, 3. *P. Morif.* 3. *Ray*, 1. *Dioscor.* 4. *Plin.* 27. *Bodæus in Theophrast. Schrod. Pharm. Ettmuller*, 1. *Dale. Konig. R. U. Boceler.* 1.

2. Tithymalus; Characias; amygdaloides. *Boerh. Ind. A.* 255. *Tithymalus Characias.* Offic. *Tithymalus Characias Monspelliensium.* Ger. 405. Emac. 499. Park. Theat. 186. Raii Synop. 3. 312. *Tithymalus Characias rubens peregrinus.* C. B. P. 290. Tourn. Inst. 85. *Tithymalus amygdaloides seu Characias.* J. B. 3. 672. Raii Hist. 864. *Esula Characias rubens.* Rivin. WOOD-SPURGE.

This Species grows in rocky Places both in *France* and *Italy*, and flowers in *March*; the Flower is not of a pale or yellowish Colour, as in the rest, but black.

The Root, Leaves, and Seeds, are of an acrimonious and caustic Quality; and the Juice, as *Dioscorides* says, is a violent Cathartic.

3. Tithymalus; Characias; amygdaloides; foliis eleganter variegatis. *Flor.* 2. 115.

4. Tithymalus; Characias; folio serrato. C. B. P. 290.

5. Tithymalus; Afer; arborescens; folio Hyperici majore, in summitate ramorum confertim nato.

6. Tithymalus; arborescens: folio glauco, angusto, acuto, dense congesto. *Boerh. Ind. A.* 256. *Tithymalus paralius.* Offic. J. B. 3. 674. Ger. 401. Emac. 498. Raii Hist. 1. 865. Synop. 3. 312. *Tithymalus paralius sive maritimus.* Park. Theat. 184. *Tithymalus maritimus.* C. B. P. 291. Tourn. Inst. 87. *Esula marina Linariæ folio.* Rivin. Irr. Tet. SEA-SPURGE.

It grows in sandy Places by the Sea-side, and runs up, with some red, woody Sprigs, a Foot, or a Cubit in Height, and thick-set, from Top to Bottom, with Leaves somewhat like those of Flax but thick, and of a greyish Sort of Colour, and turgid with a lacteous Juice of a very acrimonious Quality. The Root is of a good Thickness, oblong, woody, and perennial.

The whole Plant is reserved for Use, and is esteemed of the same Virtues with the other Spurges.

7. Tithymalus; myrsinites; latifolius. *C. B P.* 290. *Boerh. Ind. A.* 256. *Tithymalus myrtites.* Offic. *Tithymalus myrsinites.* J. B. 3. 674. Park. Theat. 187. Raii Hist. 1. 865. *Tithymalus myrtifolius.* Ger. 402. *Tithymalus myrtifolius, latifolius.* Ger. Emac. 499. *Esula foliis myrti.* Rivin. Irr. Tet. MYRTLE-SPURGE.

This Species shoots forth spriggy Stalks a Span in Length, and pretty thick, which, for the most part, spread themselves on the Ground, and are surrounded with Leaves orderly disposed, resembling those of Myrtle, fattish, of a glaucous Colour, and acuminated. The Ends of the Branches run into small Sprays, perforating round, pyxidated Leaves, and disposed in the Form of an Umbella; upon these, among the Leaves, grow Flowers of an herbaceous Colour. *Raii Hist. Plant.*

It grows in *Calabria* and *Sicily*, and flowers in Summer. The Root, Leaves, Seed, and Juice, are used, and are said by *Dioscorides* to be of the same Virtues with those of the *Tithymalus Characias*, or Wood SPURGE.

8. Tithymalus; myrsinites; angustifolius. *C. B. P.* 290.

9. Tithymalus; arboreus; caule corallino; folio Hyperici; Pericarpio barbato.

10. Tithymalus; Characias; radice repente. *H. R. Par.*

11. Tithymalus; falicis angusto folio glabro.

12. Tithymalus; tuberosa pyriformi radice. See APIOS.

13. Tithymalus; palustris; fruticosus. *C. B. P.* 292. *Tourn. Inst.* 87. *Boerh. Ind A.* 256. *Esula major.* Offic. *Esula major Germanica.* Ger. 404. Emac. 501. *Tithymalus palustris, sive Esula major Germanica.* Park. Theat. 188. *Tithymalus magnus multicaulis, sive Esula major.* J. B. 3. 671. Raii Hist. 1. 864. GERMAN SPURGE.

This Species of *Tithymalus* has a very large thick Root, several times bigger than a Man's Arm, spread out into many Branches, and sending up many tough Stalks, two or three Foot high, reddish, and much divided, having smooth, long, narrowish, green Leaves, broadest at the End. The Flowers, which grow on the Tops of the Stalks, are small and yellow, like other Spurges, which are followed by triangular Seed-vessels containing three roundish Seeds. The whole Plant is full of a caustic Milk, burning and inflaming the Mouth and Jaws for a great while together. It grows in several Parts of *Germany*, flowering in *June*. The Root is used, and of that the Bark only.

It is a strong Cathartic, working violently by Vomit and Stool, but is very offensive to the Stomach and Bowels by reason of its sharp corrosive Quality, and therefore ought to be used with the utmost Caution by steeping it in Vinegar, and giving proper Correctors, and then it is said to evacuate serous and bilious Humours, and to help the Dropsy, Gout, and other obstinate Distempers. It is put in the *Pilula Mechoacannæ* and *Fœtidæ*. *Miller's Bot. Off.*

It grows plentifully in the upper *Germany*, and in the lower by the *Rhine*, and in *Silesia* on the sandy shelving Banks of Rivers, but with us is cultivated in Gardens. The Part used in Medicine is the Root, which is a very potent Purge of Phlegm, chiefly by Stool. Of the Root, Herb, and lacteous Juice, is prepared a singular kind of Ointment, which is very effectual against a contagious Scabies of the Head.

14. Tithymalus; arboreus; altissimus; folio salicis; caulibus rubentibus.

15. Tithymalus; arvensis; latifolius; Germanicus. *C. B. P.* 291. *Esula minor, vulgo.*

16. Tithymalus, Amygdali folio angustiori; montis Pollini.

17. Tithymalus, Amygdali folio, breviori; latiori, hirsuto; montis Pollini.

18. Tithymalus; subrotundis foliis majoribus, crenatis. *Boerh. Ind. A.* 256. *Tithymalus.* Offic. *Helioscopius.* Ger. 313. Emac. 498. Park. Theat. 189. C. B. P. 291. Raii Hist. 1. 869. Synop. 3. 313. Tourn. Inst. 87. *Tithymalus Helioscopius sive solsequium.* J. B. 3. 663. *Esula solisequa.* Rupp. Flor. Jen. 219. SUN-SPURGE, or HARTWORT.

This Species is of an herby Taste, a little saltish; it gives a very deep Tincture of Red to the Blue-paper. *Martyn's Tournefort.*

This Plant has a single white Root, which runs strait downwards, is furnished with some Fibres, and shoots forth a single Stalk, half a Foot, or a Foot in Height, round, and with a few Hairs. The Leaves grow thick on the Stalk, without any Order, and are like those of Purslane, or the *Peplis*, a Digit, and sometimes a Digit and half in Length, roundish at the End, and finely indented about the Edges. The Top of the Stalk divides itself into Sprays, commonly five in Number, making a sort of Umbella and surrounded by a like Number of Leaves, which are large, and rounder than those on the Stalk, and each Spray parts into three others, surrounded by as many Leaves. The Flowers grow single on the Stalks and Divarications of the Sprays, and are small, herbaceous, tetrapetalous, with roundish, and not at all lunulated Petals. The Pointal proceeds from the Middle of the Flower, and has its Apex turgid with a triangular, tricoccous Seed-vessel, reflexed towards the Sides of the Flower.

It flowers, and the Seed is ripe in Summer, but it perishes in Winter. It grows in Kitchen-gardens, fat ploughed Fields, and is frequently found among Ruins by the Walls of Cities, and in the like Places. *Raii Hist. P.*

Besides the Virtues it has in common with the other Species, the Juice is recommended against Warts. *Dale.*

19. Tithymalus; rotundis foliis, non crenatis. *Tourn. Inst.* 87. *Boerh. Ind. A.* 256. *Peplus.* Offic. *Peplus sive Esula rotunda.* C. B. P. 292. Ger. 406. Emac. 503. J. B. 3. 669. Raii Hist. 1. 869. *Esula rotunda sive Peplus.* Park. Theat. 194. *Tithymalus parvus, annuus, foliis subrotundis, non crenatis, Peplus dictus.* Raii Synop. 3. 313. PETTY-SPURGE.

This is a Plant a Span in Height, full of a milky Juice, like the *Tithymalus Helioscopius*, and seems to be a Species of it, only less in all respects. The Stalks are reddish, the Leaves are very small, of an oblongish Round, and entire at the Margin, (by which proper Character it is certainly distinguished from the *Tithymalus Helioscopius*, whose Leaves are crenated) larger below, and smaller above. The Coma, or Tops of the Stalks, are rounded, or formed into an Umbella. The Root is slender, fibrous, and annual.

It grows in Gardens and Vineyards, and sometimes is cultivated in Fields; flowers in Summer, and endures till Winter. *Raii in Hist. Plant.*

Taken in Hydromel, it evacuates Bile and Phlegm; sprinkled upon Meat, it excites Commotions in the Belly. *Dale* from *Dioscorides.*

20. Tithymalus; annuus; folio rotundo; & caule viridi.

21. Tithymalus; maritimus; folio Linariæ. *Boerh. Ind. A.* 256. *Tithymalus amygdaloides angustifolius.* Tourn. Inst. 86. *Tithymalus characias angustifolius.* Ger. Emac. 500. Park. Theat. 187. *Tithymalo maritima affinis, Linariæ folio.* C. B. P. 256. *Esula folio Amygdali angusto.* Rupp. Flor. Jen. 220. *Alypum Matthioli, Tithymalo affinis.* J. 3 B. 676. NARROW-LEAVED WOOD-SPURGE.

It grows in Woods, and among Rushes and Brambles; the Leaves are used, and esteem'd of the same Virtues with those of the other Species of *Tithymalus. Dale.*

22. Tithymalus; Ragusinus; flore luteo; pentapetalo. *M. H.* 3. 342.

23. Tithymalus; exiguus; erectus. *H. L. Esula exigua, Tragi.* Lob. Ic. 357.

24. Tithymalus; foliis Pini; fortè Dioscoridis Pityusa. *C. B. P.* 292. *Tourn. Inst.* 86. *Boerh. Ind. A.* 257. *Esula minor,*

T I T

minor, Pityusa. Offic. *Tithymalus Pineus.* Ger. 402. Emac. 499. *Pityusa, Tithymalus Pineus sive Esula minor.* Park. Theat. 192. *Tithymalo Cypariſſiæ ſimilis, Pityusa, multis.* J. B. 3. 665. Raii Hiſt. 1. 867. PINE-SPURGE.

This Species has a much leſſer Root than the *Tithymalus paluſtris fruticoſus*, and ſends forth many Stalks not much branched, a Foot or more high, ſet thick with long narrow Leaves like Toad-Flax, but rounder pointed; the Tops of the Stalks are divided into ſeveral Partitions like Umbels, having ſeveral hollow Cup-like Leaves pierced through by the Foot-ſtalks of the Flowers, which are ſmall and yellow; the Seed-veſſel is triangular. It grows in ſeveral Places of *Germany* and *France*, but with us only in Gardens.

The Virtues aſcribed to this Spurge are the ſame with thoſe of the *Tithymalus paluſtris fruticoſus*, being a ſtrong and violent Cathartic and Emetic; but the Shops being furniſhed with ſafer and gentler Medicines, both of them are worn out of Eſteem, and very rarely preſcribed. *Miller's Bot. Off.*

The Parts uſed in Medicine are the Root, Bark of the Root, and the Leaves. The Root is oblong, more ſlender than that of the *Eſula major*, of a brown Colour on the Outſide, but of a whitiſh Yellow within, and of a pretty acrid Taſte.

It burns the Tongue and Fauces by its cauſtic Acrimony, when but taſted; but, taken inwardly, it purges Water from hydropic Perſons upwards and downwards, with ſuch Violence and Diſorder, as requires great Caution in uſing it. Both this, and the *Eſula major*, are corrected by Maceration in Acids. *Dale.*

Eſula purges Phlegm moſt violently, and eſpecially by Stool; whence it is called the Countryman's Rhubarb. It is of an acrimonious, cauſtic, and corroſive Nature, ſo as to be ſerviceable to ſturdy Beggars, who with its Juice raiſe Exulcerations on their Skin, that they may appear afflicted with the Scabies, and the like Diſeaſes, in order to move Pity. *Schroder.*

C. Hoffman ſays, that he never preſcrib'd it himſelf, but has been an Obſerver of the Raſhneſs of the common Sort, who have ventur'd to take it by whole Spoonfuls. If any, however, has a mind to try it, let him uſe the *Eſula præparata* of the Shops, which has lain four-and-twenty Hours in an Infuſion of very ſtrong Vinegar, and then dry'd. The Doſe hereof is from two Scruples to a Dram, and is an innocent Purge. *Caſp. Dornavius* corrects it thus:

> Take of Eſula prepar'd, four Ounces; Mace, Galangals, each two Drams; Spodium prepared, one Dram; Tragacanth, Bdellium, each three Drams: Reduce them to a Powder, of which give from half a Dram to a Dram. *Raii Hiſt. Plant.*

25. Tithymalus; cypariſſias. *Proſp. Alpin. Exot.* 65. *M. H.* 3 338.

This Species of *Tithymalus* has a thick Root, four Digits in Length, and turgid with a milky Juice, as is, alſo, the whole Plant, while it is freſh. This Root ſhoots up a Multitude of thin, ſlender juncous, Stalks, furniſhed with numerous ſmall, ſlender, ſhort Capillaments, like Lime-leaves, (whence the Name *Cypariſſa* has been given to this Plant) naked near the Root, but marked with frequent blackiſh ſmall Spots. Each of theſe Stalks has its Top form'd into an Umbella conſiſting of three or four Sprigs; and at the Beginning of the Umbella, on each Side a ſmall oblong Leaf, ſharp at the Extremity, and reſembling a Myrtle-leaf; but leſs, and thinner. Every Sprig of the Umbella, alſo, has about the Middle, on each Side, a Leaf like the former, but leſs, from whence it continues to bare Leaves in manner of a Spike to the Extremity, inclining on one Side, and much ſhorter and broader than the reſt; with ſmall Flowers, like thoſe of the *Leucoium*, and ſmall Fruit of a triangular Figure, containing three round, white Seeds, leſs than a Grain of Pepper. Among the aforeſaid long, ſlender, and ſtrait Stalks, there are ſometimes one or two of the Thickneſs of the little Finger, which are likewiſe divided into ſeveral foliated Caules, or Sprigs, each adorned on the Top with an Umbella, as the others, and theſe thick Stalks, before their Diviſion, are, alſo, naked; and marked with Spots

The whole Plant, while freſh, abounds with a milky Juice, which the Natives uſe as a Cathartic for the Evacuation of pituitous and ſerous Humours. *Proſper Alpinus de Plantis exoticis.*

26. Tithymalus; exiguus; procumbens; Chamæſyce dictus. *Boerh. Ind. A.* 257. *Chamæſyce.* Offic. Ger. 407. Emac. 504. Park. Theat. 195. C. B. P. 293. J. B. 3. 667. Raii Hiſt. 1. 869. *Tithymalus exiguus glaber, Nummulariæ folio.* Tourn. Inſt. 87. *Eſula minima Chamæſyce dicta.* Volck. Flor. Nor. 155. TIME-SPURGE.

This Species has a little ſlender Root, about a Palm in Length, and furniſhed with ſome very ſlender Fibres. The Stalks are from three Inches to a Foot in Length, and ſubdivided into ſmall Branches; the Stalks are of a rediſh Colour, ſomewhat hairy, and ſpreading circularly on the Ground; at their Joints grow ſmall Leaves, conjugated, roundiſh, and rediſh on the Side towards the Earth, and greeniſh above, only diſtinguiſhed with a purple Spot in the middle; and ſome of them at the Extremities of the Sprays, have both their upper and under Face of a very deep Red. The Flowers are of a purple Colour, and are produced at the Divarication of the Sprays among the Leaves.

It grows in the Vineyards and Fields of *Italy*, *Sicily*, and *Languedoc* and *Provence* in *France*, and flowers in Summer.

The Herb is uſed, and is eſteem'd a Cathartic, as well as the Juice, which is a Remedy againſt the Sting of a Scorpion, the Place being anointed therewith. *Dioſcorides.*

27. Tithymalus; Americanus; arboreſcens; folio Cotini. *H. A.* 1. 29.

28. Tithymalus; Indicus; fruteſcens. *Raii Hiſt. Plant.* 1710. *Tiru Calli. H. Malabar.* H. A. 2. 85.

29. Tithymalus; Indicus; vimineus; penitus aphyllos. *H. R. D.*

30. Tithymalus; arboreus. *Park. Theat.* 187. *Alpin. Exot.* 63. *Raii Hiſt.* 1. 864. *Tourn. Inſt.* 85. *Boerh. Ind. A.* 257. *Tithymalus dendroides.* Offic. J. B. 3. 675. *Tithymalus dendroides ex Codice Cæſareo.* Ger. Emac. 501. *Tithymalus myrtifolius arboreus.* C. B. P. 290. *Tithymalus myrſinites, arboreſcens.* Ger. Emac. 499. *Eſula caule craſſo.* Rivin. Irr. Tet. TREE-SPURGE.

The *Tithymalus arboreus* grows in the Iſland of *Crete* (now *Candy*) to the Height of a Man, or higher. The Roots are numerous, long, ſlender, whitiſh, running out here-and-there in ſtrait Lines within the Earth, and all meeting together at the Beginning of the Trunk, or all proceeding from the Beginning of the Trunk. From the Trunk, which is thick, round, and of a Man's Height, proceed ſeveral ſtrait, ſlender, viſcid Branches, forming a kind of Umbella, and beſet with long Leaves, without any Order, and thinner than thoſe of the *Tithymalus Characias.* On the Tops are the Flowers repreſenting a ſmall Umbella, and ſucceeded by ſmall, round, white Seed. The whole Plant is turgid with a lacteous Juice.

It is uſed as a Cathartic; for the Weight of half an Obolus purges Bile, Phlegm, and ſerous Humours. It is hot and dry beyond the third Degree, and excites an Inflammation and Exulceration. *P. Bellonius* tells us, that he ſaw on the Top of Mount *Ida* a *Tithymalus Dendridas* of twice a Man's Height, and as thick as a Man's Thigh. *Proſper Alpinus de Plantis exoticis.*

It grows in the mountainous Parts of the Kingdom of *Naples*, and other Countries. The Leaves, Seeds, and Juice, are uſed; which, according to *Dioſcorides*, have the ſame Virtues as moſt of the other Species of *Tithymalus.* *Dale.*

31. Tithymalus; Orientalis; Salicis folio; caule purpureo; flore magno. *T. Cor.* 2.

32. Tithymalus; annuus; erectus; folio oblongo, acuminato. *T.* 87. *Peplis, annua, foliis acutis, flore muſcoſo.* Boec. Rar. 24.

33. Tithymalus; Africanus; tuberoſus; folio Myrti.

34. Tithymalus; Americanus; folio & facie Hyperici.

35. Tithymalus; folio longo, glauco; caule rubro; capſulis verrucoſis; elatior; Siculus. *Raii H.* 872.

36. Tithymalus; Creticus; characias; anguſti folius; villoſus & incanus. *T. Cor.* 1.

37. Tithymalus; ſylvaticus; lunato flore. *C. B. P.* 190. *Tourn. Inſt.* 85. *Boerh. Ind. A.* 257. *Tithymalus lunato flore Columnæ.* Park. Theat. 187. Raii Hiſt. 1. 871. *Tithymalus ſylvaticus toto anno folia retinens.* J. B. 3. 671. EVERGREEN WOOD-SPURGE.

This Root is ſmall in reſpect of the Plant, black on the Outſide, and produces ſeveral Stalks a Foot in Height, rediſh from the Bottom, and ſmooth; but, from the Middle, there are ſeveral Leaves diſpoſed almoſt in the Form of a Wheel, to the Top, of a lively Green and hairy, and cover'd with ſhort, roundiſh Leaves, placed alternately. The Stalk about the Bottom is bare of Leaves, like the *Characias.* From the Top of the Leaves proceed ſome Alæ, bearing, on the Top, round, hollow Leaves, from whence proceed two others, ſtanding on juncous Pedicles, and hollow, like a Baſon: In theſe grow the Flowers, which are of an herbaceous Colour, inclining to yellow, tetrapetalous, and repreſenting the Figure of a new Creſcent, the Horns turned outwards, and the gibbous Parts looking inwards, and touching one another. They are furniſhed with four yellow Stamina, from whoſe Umbilicus proceeds the Pointal, ſuſtaining on the Top a triangular Fruit, propending downwards.

It grows in ſeveral Parts of *Italy*, delighting in high, moiſt, and but little ſheltered Places; it has nothing ſingular in its Virtues. *Raii H. P.*

38. Tithymalus; folio lini; major; Italicus. *Barr. Obſ.* 60. *Ic.* 821.

39. Tithymalus; marinus; folio retuſo; Terracinenſis. *Barr. Obſ.* 50.

40. Tithymalus; paluſtris; villoſus; mollior; erectus. *Barr. Obſ.* 41. *Ic.* 885.

41. Tithymalus; folio Salicis tenuiſſimè ſerrato & villoſo. *T.* 86.

42. Tithymalus; Lugdunenſis; Laureolæ folio. *D. Goiffon. H. R. D.*

43. Tithymalus; annuus; Lini folio acuto. *Bot. Monſp. M. H.* 3. 339.

44. Tithymalus; exiguus; villoſus; Nummulariæ folio. *T.* 87. *Chamæſyce villoſa, major, caulibus viridibus.* Schol. Bot 122. M. H. 3. 340. *Boerh. Ind. alt. Plant. Vol.* 1.

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The whole Plant, in what Part ſoever wounded, diſcharges a very copious and very white Milk, which by Inſolation becomes of a brown Colour. This Juice is of a moſt acrid, fervid, and penetrating Taſte, which remains a long time; and, if taken in too great a Quantity, it inflames the Fauces, and produces a Quinſey. Apply'd to the Skin, and ſuffer'd to remain there for ſome time, it firſt cauſes a Redneſs, and afterwards corrupts the whole Part. Hence by virtue of its cauſtic Quality, it is very effectual in eating out and extirpating Warts, ſmall Cancers, and Tumors. The Plant dried, and taken to the Weight of four Grains, cauſes a plentiful Evacuation of Serum, but not without moſt violent Gripings, and forces out Water through the Kidneys and Bladder. The Roots dry'd, and boiled in Whey, are proper in a Dropſy, and we read of wonderful Effects of it in *Rulandus's* Book of *Empiric Caſes*. From the firſt Species is prepar'd the Juice of the *Cataputia* of the Shops, and of the ſame is prepared an Oil, which is brought from *India*. A few Drops of this Juice, being involved in ſome tenacious Matter, and taken, are a more potent Cathartic than the *Eſula*. This Juice is much like Scammony, but more acrimonious. If this Plant be boiled in Vinegar or Rheniſh Wine, it loſes all its Force; and this is all the Method by which the *French* Phyſicians would have it corrected, but then it is of no Service in the Cure of Diſeaſes. *Hippocrates* ſays, that the *Eſula*, *Hellebore*, and the *Grana Cnidia*, cure the Dropſy; but thoſe are of an alcaline and igneous Quality. The *Tithymalus*, ſince the Root of Jalap has been known, is but little uſed. *Hiſt. Plant. adſcript. Boerhaav.*

Beſides the foregoing Sorts of *Tithymalus*, *Dale* mentions the following;

1. Tithymalus Myrſinites fructu Verrucæ ſimili. *C. B. P.* 291. *Tourn. Inſt.* 84. *Tithymalus verrucoſus.* J. B. 3. 673. Raii Hiſt. 1. 871. Synop. 3. 312. *Tithymalus verrucoſus Dalechampii.* Park. Theat. 187. ROUGH-FRUITED-SPURGE.

It grows in the Fields, and the Herb, which is uſed in Medicine, agrees in Virtues with the other Spurges.

2. Tithymalus platyphyllos. *Offic. Ger.* 404. *Emac.* 500. *Raii Hiſt.* 1. 870. *Tithymalus latifolius Hiſpanicus.* C. B. P. 291. Tourn. Inſt. 86. Park. Theat. 188. BROAD-LEAVED SPURGE.

It grows in *Spain*, and flowers in Summer. The Parts uſed are the Root, the Juice, and the Leaves, which have the ſame Virtues with the other Species. *Dioſcorides* ſays, that, bruiſed, and thrown into the Waters, it kills Fiſh.

3. PITYUSA. Offic. *Tithymalus foliis brevibus, aculeatis.* C. B. P. 292. *Tithymalus Cypariſſias vulgaris.* Park. Theat. 193. *quoad icon.* PINE-SPURGE WITH SHARP-POINTED LEAVES.

It grows in *Italy*. The Root, which is the Part uſed, is reckoned among Cathartics.

4. PEPLIS. *Offic. Ger.* 406. *Emac.* 503. *Park. Theat.* 194. *J. B.* 3. 668. *Raii Hiſt.* 1. 869. *Peplis maritima folio obtuſo.* C. B. P. 291. *Tithymalus maritimus ſupinus annuus Peplis dictus.* Raii Synop. 3. 313. *Tithymalus maritimus folio obtuſo, aurito, rubro perinde ac caule.* Tourn. Inſt. 87. PURPLE SEA-SPURGE.

This Species grows in the ſandy Places of the Sea-ſhore, and flowers in Summer. The Herb, which is uſed, is endu'd with the ſame medicinal Virtues as moſt of the other Species.

The fifth is the HIPPOPHAES; which ſee.

The ſixth is the Tithymalus cypariſſias. *Offic. C. B. P.* 291. *J. B.* 3. 663. *Raii Hiſt.* 1. 867. *Tourn. Inſt.* 86. *Tithymalus cypariſſias vulgaris.* Park. Theat. 193. *Tithymalus cupreſſinus.* Ger. 402. Emac. 499. *Eſula Officinarum.* Volck. 154. Cæſalp. 374. CYPRESS-SPURGE.

Caſpar Bauhine ranges under this laſt Species the *Tithymalus cupreſſinus* II. of *Tabernæmontanus*; but thoſe who conſider this Figure well, and thoſe of the *Tithymalus Cypariſſias*, and of the *Tithymalus Cupreſſinus* I. of the ſame Author will allow that *John Bauhine* had Reaſon to believe, that theſe three Figures repreſent the ſame Plant in different States. It is often found in the Spring, with ſeveral Stalks without Branches, garniſhed with larger Leaves than ordinary; eſpecially towards the Top, where they are marbled with Spots of the Colour of Oker. *Caſpar Bauhine* has made a different Species of it. *Thalius* calls it *Tithymalus πικτόφυλλος*, and has taken it for a *non deſcript. John Bauhine* believes, that it is an Abortion of the common *Tithymalus Cypariſſias*. It has been obſerved in the Wood of *Boulogne*, that the ſame Plant had ſuch Stalks and Leaves as *Thalius* has deſcribed; theſe Stalks were mixed, alſo, among others that were in good Condition; they periſhed in a little ime, and then the Root produced better.

The Leaves of the *Tithymalus Cypariſſias* have the Taſte of Almonds, the Milk of which has been drawn by Emulſion; they are ſtyptic, but without any Acrimony, or Bitterneſs; and give a pretty deep Tincture of Red to the blue Paper; but the Roots give a much deeper: They ſeem at firſt, to have the ſame Taſte with the Leaves, but leave at laſt a very conſiderable Acrimony in the Throat. It is very likely, that there is in the Roots of this Plant a Salt reſembling Alum, but involved in a great Quantity of reſinos Sulphur. This Mixture whitens the Phlegm of the Spurge much afer the ſame manner, as it happens to the Magiſtery of Jalap, or that of Scammony. This Spurge is an excellent Hydragogue. It is very proper to correct it by macerating it in Vinegar, or the Solution of Cream of Tartar: For if one ſwallows ever ſo little of this Root, it leaves a conſiderable Acrimony and Burning, not only in the Throat, but all along the Oeſophagus, and ſometimes in the Stomach itſelf. The Bark of the Roots of this Plant is given in Subſtance from a Scruple to a Dram, and in Infuſion from one Dram to two. This Purgative is good for the Dropſy, Cachexy, and intermitting Fevers. It may be uſed in all Diſeaſes, where it is requiſite to carry off the Humours that reſiſt the ordinary Purgatives. It muſt be given in a Bolus after the following manner; take half a Dram, or two Scruples, of the Root of this Spurge, half a Dram of Cream of Tartar, twenty Grains of *Mercurius dulcis*; mix them with a ſufficient Quantity of Marmelade of Orange-flowers, or with the Conſerve of Wormwood perfumed with five or ſix Drops of Balſam of *Peru*: The Magiſtery may, alſo, be made of the whole Plant, bruiſed and digeſted in Spirit of Wine. Twelve, fifteen, or twenty Seeds, with the Husks of this Spurge, purge well: It is uſually called in *French, Petite Eſule, Eſula minor Officinarum.*

Fernelius uſed it as the Baſis of the Piils, which he calls *Pilulæ ex Eſula*, the Doſe of which is two Scruples. The Root of this Plant is an Ingredient in the *Benedicta laxativa*, *Hydragogum eximium* of *Renodæus*, *Extractum eximium* and *Cholagogum* of *Rolfincius*. *Martyn's Tournefort.*

TITHYMELÆA. The ſame as THYMELÆA. *Blancard.*

TITIANOS, *τιτιανός*. The Name of an emollient Peſſary, deſcrib'd by *Aetius*, and by *Paulus Ægineta. L.* 7. *C.* 24.

TITILLARES VENÆ. The Iliac Veins.

TITILLICUM. The Arm-pit.

TITTHOS, *τιτθός*. The Breaſt. See MAMMA.

TLACHICHINOA PATLAHOAC. A Name for the *Heliotropium*; *Mexicanum*; *mali Limonii foliis.*

TLA ALLI. A Name for the *Mayz*; *granis aureis*, which ſee.

TLAPALCOCATLI. A Name for the *Tagetes*; *Indicus minimus*; *flore ſericea hirſutie obſito.*

TLAPALTE. A Name for the *Tagetes*; *Indicus*; *medius*; *flore luteo*; *multiplicato.*

TLATLANCUAYE. A Name for the *Piper longum*; which ſee.

TLEON. The Name of a Serpent found in *Braſil*, whoſe Bite is extremely dangerous, and which is to be cur'd by the ſame Methods, as thoſe taken for the Bite of the Viper.

As to its medicinal Virtues, it is eſteem'd ſudorific, and a Reſiſter of Poiſons.

TLILZOCHITL. See VANILIA.

TMOLITES, *τμωλίτης*. The Name of an excellent Wine, like the *Falernian*, mention'd by *Galen.*

TODDA-PANNA. A Name for the *Palma*; *Japonica*; *ſpinoſis Pediculis*; *Polypodii Folio.*

TOETICA, according to *Blancard*, are attenuating Medicines.

TOLLES, TOLES, or TOLÆ. The Tonſils. The Name is, alſo, apply'd to glandular Abſceſſes in the Limbs. *Caſtellus*, from *M. Aur. Severinus.*

TOLUTANUM BALSAMUM. Balſam of *Tolu*. See BALSAMUM.

TOMAHUACTLI COPATLI *Hernandez.* The Name of a *Mexican* Species of *Ariſtolochia.*

TOMEION, or TOMEUS, *τομεῖον*, or *τομεύς*. An Inciding, or cutting Inſtrument, either in Mechanics, or Surgery; from *τέμνω*, to cut.

TOMINEIO. The Name of an extremely minute Bird, found in *Braſil*, ſaid to be good for an Epilepſy, either eaten, or taken in Powder. *Lemery des Drogues.*

TOMOTOCIA, from *τέμνω*, to cut, and *τόκος*, a Fœtus. The Cæſarean Operation.

TONDI-TEREGAM. H. M. P. 4. T. 60. p. 123. *Arbor flore tetrapetalo odorato, fructu nullo.*

This is a tall Tree, about ſixty Feet in Height, with a thick Trunk, and very numerous, ſtrait, long, dark-green, lanuginous, rough Branches, full of fungous Pith. The Leaves ſtand by Pairs, in a parallel Order, on long Pedicles, about the ſmall Branches, and are oblong-round, acuminated, crenated, thick, ſoft, ſmooth, green, and ſhining above, and greeniſh and lanuginous beneath, of a ſweet Smell, and an aromatic Taſte. The Flowers, which conſiſt of four acuminated Petals, proceed from the Boſom of the Leaves, three or more together, and are of a purple Colour, and, being rubbed in the Hands, emit a pleaſant Smell. Between the Petals are four purpliſh Stamina, in the middle of which is the Pointal, of a beautiful red Colour, and a whitiſh Apex. The Inhabitants of *Malabar* aſſure us, that this Tree bears no Fruit; but we cannot believe them.

The Leaves of this Tree, boiled in Whey, make a good Collution of the Mouth for the Aphthæ; and of a Decoction of the Bark and Root is prepared an Apozem, with Water which allays the Heat of Fevers, opens Obſtructions of the Liver, and cures the Herpes, Scabies, and the like Affections. *Raii Hiſt. Plant.*

TONICOS, *τονικός*. An Epithet in *Galen*, for external Applications, which increaſe the Strength, Vigour, and Elaſticity

city of the Parts. Or it is apply'd to internal Medicines of the ſame Efficacy.

TONITRU. Thunder. It is more the Province of the Naturaliſt, than Phyſician, to explain the Nature of Thunder. It has been ſometimes eſteem'd the Cauſe of Epilepſies; and I have been acquainted with ſome, in whom it always excited a temporary Purging. But, in both theſe Cauſes, I apprehend it acted only by cauſing a Terror.

TONOS, τόνος, from τείνω, to ſtretch, in the Language of *Hippocrates*, is a Nerve; whether proceeding from the Brain, or the ſpinal Marrow. *Galen. Lib.* 1. *de Mot. Muſc.* tells us, that the ſame Organ is called by two Names, νεῦρον and τόνος, becauſe it may be ſaid, both νευειν, to hang loſe or ſlack, and τείνειν, to ſtretch. The ſame Author, *Com.* 1. *in 6 Epid.* tells us, there are three Kinds of ſimilar Bodies in Animals, which are exanguious, and void of Cavity, ſome proceeding from the Bones; others generated of the Brain, and ſpinal Marrow; and others in the third place, deduced from the Muſcles. The firſt of theſe, in *Hippocrates*, have commonly the Name of σύνδεσμος, (*Syndeſmos*) a Ligament: The ſecond he calls νεῦρον, and τόνος. the Third, τένων (a Tendon). And to the ſame Purpoſe *Ruffus Epheſius* deſcribes the τόνοι, as taking their Original, and doing the Functions of Action, Motion, and Senſation to the whole Body. We often meet with the Word in this Senſe in *Hippocrates*; for Inſtance, *Lib.* 2. *Epid.* where he ſays, δύω δὲ τόνοι ἀπ' ἐγκεφάλου ὑπὸ τὸ ὀσέον τῦ μεγάλου σπονδύλου, "there are "two Nerves which proceed from the Brain, under the Bone "of the great Spondyle or Vertebra." The ſame is repeated, *Lib. de Oſſium Natura*; and, *Lib. de Artic.* we read, τοῖσι γὰρ ἐπικαιροτάτοισι τόνοισι γειτονεύουσι, "for they are in the Vici-"nity of the principal Nerves." Here *Galen*, in his Comment, writes thus: ὑποκεῖσθαι τῷ ὑπὸ τῇ μασχάλῃ φησὶ τόνους ἐπικαίρους, &c. "He (*Hippocrates*) ſays that under the Alæ (or Arm-pits) are "ſeated ſome conſiderable τόνοι, ſo he calls the Nerves. It is a "ridiculous Aſſertion, therefore, of ſome modern Phyſicians, "who imagine, that he only calls the Nerves which proceed "from the Brain by Pairs, by the Name of τόνοι, becauſe, in "a Book of his *Epidemics*, he ſays, there are two Nerves, &c. "as before; for the Nerves which proceed to the Arms, are, "by all skilful Anatomiſts, concluded to ariſe from the ſpinal "Marrow about the Neck, in thoſe Parts which are in the "Vicinity of the Thorax; and are here, by *Hippocrates*, called "τόνοι, as he, alſo, calls them again twice ſucceſſively, that is, "a little below, and where he treats of the Spine." He uſes the ſame Word, τόνοι, to expreſs the Nerves in other Places of the ſame Treatiſe. *Galen*, alſo, explaining thoſe very remarkable Nerves under the Arm-pits, which *Hippocrates* calls ἐπικαιροτάτους τόνους, "ſays, that *Hippocrates* uſually applies this Appellation to "thoſe Nerves which have a great Force, as thoſe have in particular, "on account of their Vicinity to the ſpinal Marrow, and their ex-"traordinary Thickneſs." Again, in the ſame Treatiſe of *Hippocrates*, we read ἧσιν ἂν κοινωνήσωσιν οἱ τόνοι οἱ σύνεγγυς, "with "which the neighbouring Nerves communicate." Here, tho' *Galen* underſtands, by τόνοι, the Nerves of the Back and Vertebræ, it is rather meant of the Ligaments, which by their Force, and a Communication of Tubercles, more eaſily pervert and draw aſide the Vertebræ, from whence they have their Original, than the ſmall, ſoft, and weak Nerves. In the ſame Book, τόνοι νευρώδεες are the Nerves, which are extended lengthwiſe on both Sides of the Vertebræ, from the Top to the Bottom. Here νευρώδεες are expounded, in *Galen*, by ἰσχυροὶ, "ſtrong." With reſpect to theſe, and ſome other like Places of *Hippocrates*, *Erotian* expounds the Word τόνοι, where he ſays, τὰ περιτεταμένα σώματα τοῖς σάρξιν, οἷον φλέβας, καὶ τὰ ὅμοια, τόνους ὀνόμαζεν, ἀπὸ τῦ περιτείνεσθαι· ἐνίοτε δὲ τὰ νεῦρα μόνον, ἔνιοι δὲ τὰς ὑμένας ἔφασαν, "Thoſe Bodies which ſtretch them-"ſelves about the Fleſh, as Veins, Nerves, and the like, he calls "τόνοι from the Verb περιτείνεσθαι (to be ſtretched about); "ſometimes he gives this Name to the Nerves only; and ſome "have beſtow'd the Appellation on the Membranes."

Τόνος, alſo, is not ſonly a Nerve, but a Tenſion of that Nerve, as well as of other Parts, as appears from *Aretæus*, *Cap.* 4. *Lib.* 1. ὀξ. παθ. and *Hippocrates de Glandulis.*

TONSILLÆ. The Tonſils. Theſe are deſcrib'd under the Article SALIVA, by the Name of the Almonds, or AMYGDALÆ.

THE METHOD OF SCARIFYING THE TONSILS, WHEN AFFECTED WITH AN INFLAMMATION AND QUINSEY.

A violent Inflammation of the Tonſils, eſpecially if attended with a Quinſey, may be reckoned amongſt the moſt violent Diſorders. In order to prevent a Gangrene, and the like diſmal Conſequences, immediate recourſe muſt be had to the moſt efficacious Remedies, for alleviating the Inflammation. Beſides the Remedies of this kind propoſed in an Inflammation of the Uvula, (SEE UVULA) repeated Bleedings at the Arms, Legs, Jugulars, and under the Tongue, and Scarification of the Tonſils themſelves, will be very beneficial; for, by theſe means, the ſuperfluous and inſpiſſated Blood may be happily diſcharged. The antient Surgeons uſed to perform Scarification and Cupping on the external Parts of the Neck, neareſt the Tonſils; a Practice which I have found very efficacious in this Diſorder. In *England* and *France* it is uſual, as I have been informed, to ſcarify the Tonſils internally; which is certainly the readieſt and moſt convenient Method of Cure, if, at the ſame time, proper internal Medicines are exhibited; as plentiful drinking of thin aqueous Liquors, and cooling Clyſters. For the more convenient Performance of this Operation, ſuch an Inſtrument ſhould be uſed as is delineated in *Tab.* XLII. *Fig.* 9. which may ſerve to depreſs the Tongue, whilſt at the ſame time the Scarificator is concealed. This Inſtrument may be called *Pariſthmiotomus*, from the *Greek* Word *Periſthmia*, which ſignifies the Tonſils, and ſhould be ſomewhat longer than it is repreſented in the Figure.

THE METHOD OF OPENING ULCERS IN THE TONSILS.

Sometimes, through Neglect or Miſmanagement, an Inflammation of the Tonſils cannot be reſolved, but degenerates into an Abſceſs, or Scirrhus. In ſuch a Caſe it is neceſſary, by emollient Gargariſms and Malagmas, to accelerate the Suppuration with all Expedition; by which means the Patient will not only be relieved from a moſt miſerable Situation, but, alſo, from the Danger of Suffocation, which is threatened by the Increaſe of the Exulceration; having, likewiſe, his Speech and Deglutition reſtored. For theſe Reaſons it would be highly improper and extremely dangerous, to wait till the Matter burſts ſpontaneouſly; and, therefore, the Abſceſs muſt be opened by Inciſion, as ſoon as the Pus can be perceived to be formed; which muſt be carefully obſerv'd both by Feeling and Inſpection.

This Operation may be thus performed: Take a long Lancet covered with Linen, or a Piece of Plaiſter, ſo that only about the Breadth of a Finger may be left naked at the Point. Then the Tongue being depreſſed with a Spatula, like that in *Tab.* XXII. P, or the plain Handle of a Spoon, the Lancet muſt be entered into the moſt proper Part of the diſeaſed Tonſil; and, immediately upon the burſting of the Matter, the excruciating Pains will abate. In this Operation, the *Pariſthmiotomus*, or Inſtrument above recommended, for ſcarifying the Tonſils, (ſee *Tab.* XLII. *Fig.* 9) may be more conveniently uſed; which not only ſerves to depreſs the Tongue, inſtead of a Spatula; but, as the Lancet is concealed, as it were, in a Sheath, the Patient is not intimidated by ſeeing it: It muſt be introduced into the Abſceſs by puſhing forward the Button B, with the Fingers. This Inſtrument is, therefore, very neceſſary for Children, and timorous Patients.

The exulcerated Tonſils being thus opened, a warm Gargariſm of a Decoction of vulnerary Herbs mixed with Honey of Roſes, or of Wine mixed with Water, or a little of the Infuſion of Tea, and Honey of Roſes, muſt be often uſed every Day, till the diſeaſed Part is healed. Mean while the Patient ſhould be ſtrictly ordered to abſtain from whatever is acrid or ſalt; for, ſhould any ſuch Subſtances adhere to the Wound, they may irritate and excite a new Inflammation, to the great Hazard of his Life.

THE METHOD OF TREATING INDURATED TONSILS.

Sometimes, after an Inflammation of the Tonſils, they are ſo extremely indurated and ſwelled, that they almoſt cloſe up the Fauces, and prevent the Patient from either ſwallowing or breathing, eſpecially if both the Tonſils are affected. As this Hardneſs cannot eaſily be diſcuſſed, it will be more proper to extirpate it; and Extirpation may be performed either with corroſive Medicines, with the Knife, or ſometimes by a Ligature.

In the Application of corroſive Medicines, particular Care muſt be taken not to uſe the ſtronger Eſcharotics, which might happen to ſlip into the Stomach, and occaſion greater Miſery to the Patient. Here, then, we may apply the Oil of Tartar *per Deliquium*; and, if that ſhould fail, a Mixture of Aqua-fortis, with as much Quickſilver as it can diſſolve over the Fire. With theſe, or the like Remedies, that Part of the Tonſils, which is moſt ſeverely indurated, ſhould be touched once or twice a Day with a Bruſh, till they are ſufficiently diminiſhed. Two Cautions are neceſſary to be obſerved in this Method of Cure; that none of the ſound Parts be touched with the Eſcharotic; and that neither Meat nor Drink be taken, nor even the Spittle ſwallowed, for ſome time after its Application, leſt ſome of it ſhould be carried into the Stomach. It is, therefore, expedient for the Patient to incline his Face downwards, for half an Hour after the Application, that the Eſcharotic may flow, with the Spittle, out of his Mouth; and, before eating or drinking, he ſhould waſh his Mouth, and gargarize with warm Water. This Courſe he muſt purſue, till a ſufficient Quantity of the Tonſils is conſumed to make him breathe and ſwallow freely. There is no Occaſion for conſuming the Tonſils totally, which would not only prolong the Cure, but prove prejudicial.

The Method taken by the Antients to extirpate indurated Tonſils, was by Inciſion. They opened the Mouth with an Hook, like thoſe repreſented in *Tab.* XXIX. *Fig.* 2. or 3. and carefully removed the indurated Part with a proper Knife. But as this Operation muſt be very cruel, and is, alſo, inconvenient, becauſe of the obſcure Situation of the Tonſils, it is ſeldom now performed.

Laſtly, the third Method of removing indurated Tonſils, is by Ligature, which is to be performed when the Tonſil hangs, as it were, by a ſlender Stalk; though, it may be, with equal Conveniency, extirpated with a Knife, or Pair of Sciſſars. To apply the Ligature, that Inſtrument is recommended, which is repreſented in *Tab.* XLII. *Fig.* 7. The Ligature muſt be renewed every Day, till the corrupted Part of the Tonſils falls off; which, according to ſome Phyſicians, happens in two or three Days, if the Ligatures be exactly made. The Ends of the Thread or Ligature ſhould be fixed upon the Cheek with a Piece of Plaiſter, leſt it ſhould ſlip into the Fauces. *Cheſelden* made a Ligature in this kind of Diſorder, with the Aſſiſtance of a Probe. But in a ſcirrhous Tonſil, with a broad Root, he perforated its Baſis with a peculiar kind of Needle, made a Ligature on both Sides, and, and by this Method extirpated it. *Heiſt. Chir.*

Of Ulcers of the Tonsils.

The *Tonſils* are ſubject to Ulcers, ſome of which are familiar, of a favourable Kind, and harmleſs; others foreign, malignant, and deadly. The mild or favourable Sort are pure, ſmall, not deep, and free from Pain and Inflammation; but the malignant are broad, hollow, ſordid, and contained under a white, livid, or black concreted Humour; and theſe Ulcers go by the Name of *Aphthæ*. If the Concretion be deep, the Diſeaſe is an *Eſchara*, (or Cruſt) and is called by that Name. Round this *Eſchara* appears a great Redneſs and Inflammation, attended with a Pain in the Veins, as from a Carbuncle, and an Eruption of thin, ſmall Puſtules, which, breaking out one upon another, form at laſt a Coalition, and become one broad Ulcer. And if this Ulcer eats its Way outwardly, it comes firſt to the Uvula, and conſumes it; and afterwards makes its Approaches to the Tongue, Gums, the Ligaments of the Jaws, [χαλινὸς] and the Teeth, which are looſened in their Sockets, and become black, and the Inflammation extends itſelf to the Neck; after which the Patient ſurvives but a few Days, ſinking under the accumulated Weight and Oppreſſion of the Fever, Inflammation, Fœtor, and Famine. But if the phagedenic Ulcer ſpreads itſelf through the Aſpera Arteria towards the Thorax, it induces a Suffocation on the ſame Day; for the Heart and Lungs are incapable of ſupporting either the Smell, or the Ulcer, or the Ichor; but Coughs and a Dyſpnœa ſeize the Patient.

The Cauſe of an Affection of the Tonſils is the Deglutition of cold, rough, hot, acid, and aſtringent Things; for theſe Parts are ſerviceable to the Thorax for the Voice and Reſpiration, to the Belly for the Tranſmiſſion of the Aliment, and to the Stomach for Deglutition. And if any Diſorder happens to the internal Parts, as to the Belly, Stomach, and Thorax, the ſame aſcends, and is communicated to the Fauces and *Tonſils*, with the adjacent Parts, by Eructation. For this Cauſe Boys, before the Age of Puberty, are principally ſubject to this Diſeaſe; for as, at this tender Age, they abound with Heat, they require and receive great Quantities of cold Air by Inſpiration; they are, alſo, intemperate in eating, and covet Varieties; and are, beſides, much given to Vociferation, when they are angry, or at Play. Girls, too, are much ſubject to this Diſtemper, before their firſt menſtrual Purgations. *Aret. περὶ αἰτ. καὶ σημ. ὀξ. παθ. Lib.* 1. *Cap.* 9. *See the Remainder of this Chapter, which gives an Account of the Countries moſt ſubject to this Diſorder, and the moſt miſerable Kind of Death it induces, under the Article* Ægyptia Ulcera.

Of the Cure of malignant Ulcers in the Tonsils.

The Method of Cure of this Kind of Ulcers is partly in common with that of other Affections of the *Tonſils*, partly proper to the Diſeaſe itſelf. Common Remedies, which ſerve as well for an Inflammation and Strangulation, are Clyſters, Phlebotomy, Embrocations, Cataplaſms, Fomentations, Ligatures, and Cupping. But ſtronger Unctions are to be uſed; for neither the Ulcers remain in a ſettled State, nor Cruſts ariſe on the Superficies; and if there be a Diſtillation of Ichor from the Place inwards, the ſound Parts are very ſoon ulcerated, and the Ulcer very quickly eats its Way into the internal Parts, and deſtroys the Patient.

It would, therefore, be proper indeed to cauterize the diſeaſed Part, if it were not too raſh an Undertaking on account of the Situation of the Fauces; but we ought, however, to uſe Remedies equivalent to a Cautery, in order to reſtrain the ſpreading of the Ulcer, and to cauſe the Cruſts to fall off. Such are Alum with Honey, Galls, Balauſtines dry mixed with Hydromel; or the ſame may be blown in through a Reed, Pen, or a long and thickiſh Quill [καυλῷ] ſo as that the Medicines may apply themſelves to the Ulcers. Very proper Remedies are, alſo, burnt Chalcitis, with Cadmia triturated with Vinegar; or two Parts of Cadmia with one Part of the Root of Rheum in ſome (proper) Liquor. But Care is to be taken, that the Ulcers may not be compreſſed; for by that means they would contract Humidities, and ſpread themſelves the farther. For this Reaſon dry Medicines are to be applied by way of Inſperſion with a Feather, and the liquid Kind rendered thin enough to be infuſed on the Uvula. If the Cruſts are already reſolved, and the Ulcers appear red, there is great Danger of Convulſions; for, as the Ulcers generally dry up, the Nerves are contracted. The Parts are, therefore, to be mollified and moiſtened with Milk and Amylum, or the Juices, or Cremors, of Ptiſan, *Tragus*, Linſeed, or the Seed of Fenugreek. Sometimes the Uvula is corroded to the very Bone of the Palate, and the Tonſils are conſumed to their very Baſis, and the Epiglottis; by which means a Cicatrix is induced ſo conſiderable, as to intercept the Deglutition of either ſolid or liquid Aliment, and even to force a Return of what the Patient drinks, through his Noſtrils, whence, of Neceſſity, he periſhes with Hunger. *Aretæus, περὶ θεραπ. Ὀξ. Παθ. Lib.* 1. *Cap.* 9.

TONSORIS EMPLASTRUM. See Emplastrum.

TOPAZIUS. The Topaz. See Chrysopasius.

TOPHUS. A Toph. A calcarious, or rather chalky Subſtance, growing in any Part of the Body.

TOPICA, from τόπος, a Place. Topics, or local Applications.

The beſt and moſt generous Remedy may, according to *Galen*, prove injurious, as well as beneficial. This Maxim holds true, not only with reſpect to internal Medicines, but, alſo, with reſpect to Topics, or external Applications. Though the former of theſe are more efficacious, and of more univerſal Uſe, than the latter, yet Topics are, in ſome Caſes, ſo neceſſary, that Practice cannot ſubſiſt without them; for which Reaſon we ſhall point out the ſeveral Errors with reſpect to the Uſe and Application of Topics.

Topics in general include whatever is externally applied to any Part of the Body, and conſequently comprehend whatever is laid to Wounds, Ulcers, or any Injuries of the Limbs; whether it conſiſts in the Application of the various chirurgical Inſtruments, or in the Uſe of Ointments, Plaiſters, Injections, and Tents. But we ſhall confine ourſelves to the Conſideration of thoſe Topics uſed in Diſorders which ariſe from an internal Cauſe, and conſequently belong rather to the Province of the Phyſician, than of the Surgeon.

Baths, then, for the Head, whether prepared of ſimple Water and a Lixivium, or Wine boiled with cephalic or emollient Herbs, are often prepoſterouſly uſed by Perſons ignorant of Medicine. Theſe are generally prejudicial in all Diſorders of the Head, and a Weakneſs of the Brain or Nerves; but they are in a particular manner injurious in Achors, Catarrhs, a Ringing of the Ears, Dulneſs of Hearing, and Inflammations of the Eyes. I have often known an Epilepſy produced by a prepoſterous Uſe of Baths for Childrens Heads; and I am of Opinion, that we ought totally to abſtain from ſuch Baths; and ſubſtitute, in their room, Frictions of the Head, and Subſtances of a drying and corroborative Nature; for the above-mentioned Diſorders are produced by an impetuous Conveyance of the Humours from the inferior Parts to the Head, and an Infarction and Stagnation of Blood either pure or ſerous there. Now nothing more diſpoſes the Head to receive the Impetus of the Humours, and retain the ſerous Parts of the Blood, than theſe Baths; which, by their hot or tepid Moiſture, render the Fibres flaccid, and hinder the congeſted Humours from returning thro' the Veins. But in all Diſorders of the Head, or ſuperior Parts, we are rather to bathe and relax the Feet and Legs, in order to make a Revulſion and Derivation from the ſuperior to the inferior Parts.

I, alſo, condemn the Uſe of cephalic Plaiſters; when, for Inſtance, the whole Head is ſhaved, and covered with a Plaiſter, as is uſual in violent Hæmorrhages, Epilepſies, and other Symptoms, generally produced by external Cauſes, ſuch as Contuſions or Blows: And though ſome, upon this Occaſion, make a Diſtinction between Plaiſters prepared of Balſams and Gums, and thoſe which conſiſt of viſcid and glutinous Subſtances, yet, in my Opinion, both are more hurtful than uſeful, not excepting the celebrated Betony-plaiſter. The Reaſon of this Aſſertion ſeems to be, that the freer the Perſpiration of the Part affected, is, the Cure always ſucceeds the better. Beſides, the farther the Parts are removed from the Heart, the Source of Heat, or the leſs Blood circulates in them, of the greater Importance it is, to promote Tranſpiration in them. Every one muſt, therefore, be convinced, that Plaiſters muſt prove prejudicial by cloſing the Pores of the Head.

We can, therefore, from Experience, recommend in their ſtead dry Powders, either ſprinkled on the Head, or included in Bags; and which, by their ſubtle, mild, and ſulphureous Quality, corroborate the nervous or cold Parts, and preſerve a free Perſpiration. But if dry Powders are contraindicated, we may ſubſtitute, in their room, Bags with cephalic Ingredients, boiled in Wine, or Liniments prepared of ſuch Subſtances, as are poſſeſſed of a penetrating Quality, a volatile, oleous Salt, and a balſamic Reſin; among which the moſt conſiderable are the *Peruvian* Balſam, Camphire, rectified Spirit of Wine, Sal Ammoniac, or volatile Salt of Worms, ſtrengthened by the unadulterated Oils of Lavender, Marjoram, Roſemary, or Nutmegs, and impregnated with Eſſence of Caſtor. Theſe Liniments afford great Relief in all Diſorders of the Head, whether they partake of the Nature of Convulſions and Epilepſies, or are accompanied with

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TOP

Pain, and the Interception of any of the Senſes. But my Intention is not to deſtroy the Uſe of all Plaiſters, which, in certain Caſes, are beneficial, when applied to the Forehead, or Nape of the Neck; but I only ſpeak of thoſe Plaiſters which cover the Whole or Half of the Head: It is, alſo, to be obſerved, that frequently powdering the Hair, eſpecially with pounded Starch, is productive of bad Conſequences. Thus a Gentleman of Diſtinction told me, that, by the frequent and immoderate Uſe of ſuch Powder in his Youth, he contracted a Weakneſs of his Eyes, which at laſt terminated in a perfect Cataract. Nor is it difficult to aſſign a Reaſon for this, ſince ſuch tenacious Subſtances, by blocking up the Pores of the Head, greatly obſtruct Perſpiration, ſo neceſſary to the Health and Strength of that Part.

It is a common Error in Practice, to apply various Liniments and Balſams in moſt Diſorders of the Head, eſpecially a Vertigo, an Head-ach accompanied with a Senſe of Weight, a Carus, an Apoplexy, a Torpor of the Senſes, and an Hemicrania. Thus it is cuſtomary not only to anoint the Noſtrils and Temples, but, alſo, the Crown of the Head and Neck, with fragrant Balſams prepared of Musk, Amber, Civet, and Oil of Roſes, becauſe theſe are thought efficacious againſt Diſorders of the Head. But ſuch a Practice is not ſo innocent as it is imagined; for theſe are vaporous Medicines, and, by their elaſtic Vaporoſity, inſinuating themſelves into the Pores of the Veſſels, diſtend them too much, and, in ſome meaſure, fix the impetuous Motion of the Blood; and thus, by their ſedative and anodyne Quality, diſpoſe to Drowſineſs. Hence every one muſt perceive, that we are to deal cautiouſly with Medicines of this kind, which are not proper in Diſorders of this Nature, where the Head and its Veſſels are already infarcted and diſtended by the Impetus and Quantity of the Blood. In this Caſe, by increaſing the Expanſion of the Humours, and conſequently augmenting the Danger of their Stagnation, they are experimentally found to produce Head-achs, Vertigos, Ringing of the Ears, Drowſineſs, and a greater Oppreſſion and Torpor of the Mind and Senſes. What *Hippocrates* ſays in *Aphor.* 28. *Sect.* 5. with reſpect to Fumigations, holds true concerning theſe Medicines; which is, that they would, in many reſpects, contribute to the Production of good Effects, if they did not induce an Heavineſs of the Head. For which Reaſon, to the Remedies above-mentioned, we prefer ſuch balſamic Liniments, as only conſiſt of highly rectified Spirit of Wine, in which Camphire, the Oils of Marjoram, Lavender, and Rue, but not adulterated with Turpentine, are diſſolved; for theſe Subſtances rather operate by diſcuſſing and opening the Pores, than by filling the Head with Vapours; and for that Reaſon are always ſafer in Cephalalgias, and violent apoplectic Fits.

We now proceed to the Topics generally uſed in Diſorders of the Eyes; and ſo great are the Errors committed both by Phyſicians and Surgeons in this reſpect, that we may juſtly affirm, that more are deprived of Sight by a prepoſterous Application of theſe, than by the Violence of the Diſorders. Thus it is a vulgar Error, that cold Subſtances are friendly to the Eyes; whereas ſuch as are hot are prejudicial to them: This, indeed, holds true, when the Eyes are ſound, in which Caſe it is more expedient to waſh them with cold, than with warm Water; becauſe the latter, by relaxing the Fibres, diſpoſes the Eyes to Defluxions, whereas cold Water, by corroborating the Pores of the Coats, and Sides of the Veſſels, prevents an exceſſive Flux of Blood and Humours, and thus preſerves the Eyes ſerene, lively, and ſound. But this Rule is by no means to be obſerved in a preternatural State of the Eyes, eſpecially in an Ophthalmia, in which the Uſe of cold Subſtances is highly dangerous. Thus *Foreſtus*, in *Obſ. Chirur. L.* 2. *Obſ.* 19. gives us an Account of a Woman, who, labouring under an Ophthalmia, uſed a Collyrium of Talc, and diſtilled Water; but, ſoon after, her Eyes were ſeized with ſuch an intenſe Pain and Heat, that an Ulcer ſucceeded. When the Eyes have been afflicted with an inflammatory Heat, I have often ſeen them rendered turbid, and the Inflammation ſo greatly increaſed, that within a few Days the Sight has not only been obſcured, but, alſo, ſometimes totally deſtroyed for want of proper Management; for as in all Inflammations, skilful Phyſicians juſtly condemn the external Application of cold, aſtringent, and incraſſating Subſtances, ſo I ſee no Reaſon why we ſhould admit their Uſe in Inflammations of the Eyes, whoſe capillary Veſſels are far more tender than thoſe of other Parts; for the Cauſe and Origin of every Inflammation is an Infarction of Blood or Humours in the larger Veſſels, on account of the Obſtruction of the adjacent ſmall Veſſels: Now Obſtructions are by nothing more confirmed, than by Things actually cold, which deprive the Juices of their Fluidity, and render them thick, and incapable of Circulation.

In inflammatory Diſorders of the Eyes, we not only reject ſuch Collyriums, as are actually cold, but, alſo, ſuch as are poſſeſſed of an incraſſating and condenſing Quality, or invite a farther Afflux of the Humours to the Part affected; ſuch as all the ophthalmic Waters, the Frogſpawn Water, for Inſtance, Roſe-water, that of Plantain, that with Sugar of Lead, that of Alum, the White of an Egg, red Bole, and all mucilaginous Subſtances. Thus *Foreſtus*, in *Lib.* 2. *Obſ.* 26. obſerves, that oleous and pinguious Subſtances are hurtful to the Eyes; in Confirmation of which, he tells us, that a Barber treated an Ulcer with hot Oil, till, breaking into the Tunica Cornea and Uvea, it at laſt degenerated into a Cataract. Greater Efficacy is to be promiſed from ſuch Subſtances, which, without any great Acrimony of Heat, are poſſeſſed of a diſcuſſive Quality; among which Camphire is the moſt conſiderable, becauſe, as in all other Inflammations, ſo, alſo, in this, it affords inſtantaneous Relief. If, therefore, the Inflammation is only ſlight and ſuperficial, Elder-flower Water, in which a little Saffron is diſſolved, with the Addition of a few Drops of a well-ſaturated Solution of Camphire, applied tepid, is of ſingular Service. If the Inflammation is accompanied with a ſaline and acrid Lymph, a Mucilage of Quince-ſeeds, or Roſe-water mixed with Saffron and Camphire, are of ſingular Efficacy; for when the Inflammation is violent, deep, and dangerous, the Eye being almoſt deprived of Sight and Senſibility, I have found happy Effects produced by tepid camphorated Spirit of Wine, mixed with *Peruvian* Balſam; by which means the Senſation, Motion, Tone, and Colour of the Eyes are gradually reſtored.

It is ſufficiently known, that Vitriol, in conſequence of its partaking of Copper, is among Practitioners reckoned a great Arcanum in Diſorders of the Eyes; but as it is almoſt promiſcuouſly uſed in all Collyriums, great Misfortunes are ſometimes produced by it. We are, therefore, to abſtain from the Uſe of Vitriol in all Inflammations, and in ſaline, hot, and acrid Defluxions, accompanied with Redneſs and Itching, becauſe Vitriol, by its Acrimony, increaſes all theſe Symptoms. But Vitriol is properly uſed, either when the Humours are thick, and formed into Sordes, or when they begin to form ſmall Membranes in the Tunica Albuginea, which frequently happens after the Small Pox and Meaſles, which induce a too great Thickneſs of the Lymph. In ſuch a Caſe, therefore, ſurpriſing Effects are produced by one Grain of *Cyprian* Vitriol, diſſolved in one Ounce of Celandine Water, with which Liquor upon a Feather the Part affected is to be frequently touched every Day. But when a manifeſtly corroding and burning Matter is perceived, temperating, demulcent, and mucilaginous Subſtances are to be uſed; and of theſe the beſt are, the Mucilages of the Seeds of Fleabane, and white *Sieff* without Opium; as, alſo, the Powder of Sarcocolla.

With reſpect to the Fat of Vipers, and of that Species of Fiſh called *Umber*, which is ſo greatly extolled in Wounds of the Eyes, and in that Diſorder in their Corners, which is generally called the *Pannus*, we are to obſerve, that theſe Fats ought to be recent, ſince, when by Age they have contracted a Rancidity, they are not only injurious in theſe, but, alſo, in all other Diſorders of the Eyes. Beſides, Collyriums are of no Uſe, or rather hurtful, when, from a Fault and Dyſcracy of the Lymph and Blood, which often happens in a Scurvy and Lues Venerea, the Eyes are red, painful, dropping, and turbid. In ſuch Caſes, Topics of all Kinds are uſeleſs: We firſt correct the Juices by internal Medicines, which is excellently performed by Decoctions of the Woods, and of ſuch Herbs, as ſweeten the Blood. It, alſo, ſometimes happens, that, in conſequence of an inveterate Tumor of the Glands of the Neck, an obſtructed Diſcharge from the Ears, an Application of Coſmetics to the Face, or the Retropulſion of an Achor in the Head, the peccant Matter fixes its Seat in the Eyes; in which Caſe we are not to truſt to Topics alone, but theſe are to be aſſiſted by internal Medicines, and the Cauſe of the Diſorder muſt be totally removed.

With reſpect to Diſorders of the Ears, numberleſs Errors are, alſo, committed; for nothing is more improper, than, in a Dulneſs of Hearing, to put Oils, whether expreſſed, as the Oil of ſweet Almonds, or mixed with Cephalic Oils, into the Ears. Though this Piece of Practice is extolled by many Practitioners, yet I have rarely found it productive of good Effects: For a Dulneſs of Hearing proceeds either from a too great Relaxation of the Tympanum, or from an exceſſive Humidity of the Membrane ſurrounding the Organ of Hearing, that is, the Labyrinth and Cochlea; ſo that Oils, by producing a greater Relaxation, increaſe the Diſorder; and Oils of an hot, acrid, or too ſpirituous Kind produce intenſe Pain and Heat in that highly nervous and ſenſible Membrane, which ſurrounds the auditory Paſſage. Beſides, if we have recourſe to the Obſervations of the moſt skilful Practitioners, we ſhall find, that Topics are ſo far from being beneficial in a Dulneſs of Hearing, or Ringing of the Ears, that they are rather hurtful. Nor do I ſee by what means the Virtues of Medicines, whether unctuous, oleous, or ſpirituous, can penetrate to the Seat of the Diſorder, which is within the Brain, or in the moſt remote Receſſes of the Os Petroſum. In ſuch Caſes I have always obſerved happier Effects produced by apophlegmatizing and cephalic Subſtances.

There are, however, ſome Caſes, in which Topics are beneficial in Diſorders of the Ears; when, for Inſtance, the Ear-wax is ſo indurated, as to aſſume the Nature and Conſiſtence of a Plaſter, and greatly obſtruct the Hearing; in which Caſe tepid Oil of ſweet Almonds molliſies the indurated Ear-wax, ſo that it may be commodiouſly extracted with Ear-picks. I remember ſome Years ago a Mountebank pretended to a wonderful Secret for removing Deafneſs, which conſiſted in injecting into the Ear, with a Syringe, Fennel-water, into which a little of the Oil of Tartar had been dropped. This Injection he cautiouſly made ſeveral

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times a Day; and in ſome Patients, that is thoſe whoſe auditory Paſſages were block'd up with the Ear-wax, the Experiment ſucceeded very well. The like happy Effect is ſometimes produced by a tepid Injection of mineral Waters into the Ear; but they are only beneficial, when the Dulneſs of Hearing proceeds from Sordes too much clogging the Membrane of the Tympanum.

As Abſceſſes ſometimes ariſe in the internal Ears, 'tis to be obſerved, that theſe require a particular Treatment, ſince, if they are treated in any other manner, they frequently terminate in putrid and carious Ulcers, accompanied with a total Loſs of Hearing. 'Tis, therefore, a bad Piece of Practice to uſe digeſtive and oleous Ointments, ſuch as theſe cold, dry, nervous, and ſenſible Parts cannot bear. But ſuch Abſceſſes are rather conſolidated and hindered from degenerating into Ulcers, by putting warm Balſamics into the Ear, with Cotton; ſuch as the Eſſences of Myrrh, Opobalſam, and Amber.

The Noſtrils have, alſo, their peculiar Topics, which, when properly apply'd, are very beneficial, but no leſs prejudicial, when prepoſterouſly uſed; an Inſtance of this we have in the great Variety of Things thruſt up the Noſtrils, in order to ſtop exceſſive Hæmorrhages: And tho' the Applications of this Kind are inconceiveably numerous, yet few of them are uſeful, or even innocent in Practice. For as an Hæmorrhage generally proceeds from an internal Cauſe, which for the moſt part is a Spaſm, a violent Conſtriction or Obſtruction of ſome Parts remote from the Noſtrils, and as the Blood is impetuouſly convey'd to the Veſſels of the Head, when this Blood is too much congeſted, it diſtends the Orifices of the Veſſels, and at laſt breaks the Coats of the Noſtrils. Hence, every one muſt perceive, that it is not only in vain, but, alſo, dangerous, in ſuch Caſes, to uſe external Styptics and Repellents; for, cloſing up the Orifices of the Veſſels by Aſtringents, we derive the Diſorder to other Parts of the Head, or perhaps to the Breaſt, whilſt the internal Impetus of the Blood ſtill remains. But if the open Orifices of the Veſſels from which the Blood flows, are ſituated pretty deep in the Fauces, ſo that the Efficacy of Styptics cannot reach them, and the Noſtrils, in the mean time, ſo ſtopt up, as to afford no Diſcharge of the Blood, it falls from the Fauces upon the Aſpera Arteria, ſometimes not without Danger of Suffocation. Beſides, as all Styptics are unfriendly to nervous and glandular Membranes, they greatly injure theſe Parts, when thruſt far into the Noſtrils.

Theſe Topics, for the Noſtrils, are, therefore, of little or no Uſe, unleſs we previouſly derive the Blood from the Head, by Veneſections, Frictions, and Immerſions of the Feet and Hands in warm Wine or Water; as, alſo, by Diaphoretics, which, without any great Motion and Heat, propel the Blood from the Centre to the Circumference of the Body; and then there is no Neceſſity for theſe cold and ſtyptic Repellents, ſince the Eſſence of *Terra Japonica* alone, received into the Noſtrils, is far ſuperior to them all. 'Tis cuſtomary, among the Vulgar, in exceſſive Hæmorrhages of the Noſe, to apply a Piece of Silver Coin wet in cold Water, either to the Forehead or Nape of the Neck; or to apply a Linen Cloth wet with cold Water, either to the Forehead or Whole of the Neck. But theſe Practices cannot be uſed in the Beginning of the Hæmorrhage, without Danger of an Apoplexy. We do not, however, diſapprove of ſuch Epithems as are at once poſſeſſed of a diſcutient and corroborative Virtue; ſuch as Vinegar of Roſes, mixed with Nitre, Camphire, and the Oil of Roſewood; which Mixture, when apply'd tepid to the Temples and Neck, is of ſingular Efficacy, and preferable to all others.

We now come to conſider the Topics generally uſed in thoſe putrid and carious Ulcers of the Oſſa Squamoſa, which are familiar to thoſe labouring under the Lues Venerea, or the Scurvy. The Topics for theſe Purpoſes are generally the Waters of Roſes, Plantain, and Houſleek, mixed with red Bole, Sugar of Lead, or Magiſtery of Lead; or, if the Ulcers penetrate to the Bones of the Fauces, or corrode or conſume the Subſtance of the Uvula, Injections or Gargariſms are commonly uſed. But all theſe cold Preparations are of no Uſe, ſince they are by no means fit for ſtopping the putredinous Corruption. Diſorders of this Kind require far more powerful, and more penetrating Medicines; ſuch as Oil of Cloves, which is an excellent Preſerver of the Bones, eſpecially when mixed with *Peruvian* Balſam; *Elixir Proprietatis*, prepared without an Acid; Eſſence of Amber, or camphorated Spirit of Wine, cautiouſly injected thro' the Noſtrils, by means of a Syringe, are, alſo, excellent for curing theſe fetid and malignant Ulcers. This Method I have often, upon Reflection, concluded good; and, upon Trial, found it to anſwer my Expectations. Many Venereal Patients, on account of the Ignorance of their Surgeons, and the prepoſterous Application of Medicines, are long afflicted with ſuch ſordid Ulcers, which at laſt corrode and conſume the whole internal Structure of the Noſtrils, the Uvula, and the Bone of the Palate, to the great Detriment not only of their Voice, but, alſo, of their Health, ſince Gargariſms, tho' prepared of the moſt efficacious Ingredients, are in vain apply'd, becauſe they cannot reach the Root of the Diſorder, and the Part affected, which is above the Bone of the Palate.

Many Topics are, alſo, preſcribed both by Phyſicians, Surgeons, and the Vulgar, for the Tooth-ach; but moſt of theſe generally do more Injury than Good: And tho' after the Uſe of gentle Aſtringents and Anodynes, the beſt of which ſeems, to me, to be the Eſſence of *Terra Japonica*, mixed with the anodyne Eſſence, there is ſome Alleviation of the Pain; yet it is very ſmall, ſhort-liv'd, and, at another time, not to be obtained. And as a Tooth-ach is frequently epidemical, and ariſes from a Rheumatiſm, or an acrid eryſipelatous Defluxion, infeſting the carious Tooth, and generally joined with a catarrhal Fever, it is eaſy to perceive, how fooliſh and ineffectual an immediate Application to the Tooth muſt be. In this Caſe, if any Benefit is to be expected from external Applications, the beſt we can uſe, are paregoric Bags, prepared of diſcutient, carminative, and anodyne Ingredients: And tho' the Oils of Cloves and Origanum are excellently appropriated to a Caries of the Teeth, accompanied with Pain, yet, when, in a carious Tooth, a nervous Membrane is too much diſtended, or corroded by an aqueous Fluid, lodged between the narrow Interſtices of the Bone, we are rather to uſe the liquid apoplectic Balſam, or the Balſam of Life, received into the Noſtrils, or a tepid Decoction of Milk with Elder-flowers and Saffron kept in the Mouth, will better alleviate ſuch a Pain, than any other external Application whatever. And I can affirm, from Experience, that Diaphoretics alone, ſuch as the Bezoardic Tincture, Sulphur of Antimony, prepared in the manner directed by me, or ſuccinated Spirit of Hartſhorn, mixed with the ſweet Spirit of Nitre, uſed in violent Tooth-achs, with a ſudorific Regimen, after the Uſe of ſuch Medicines as render the Body ſoluble, produce very happy Effects; ſo that 'tis ſufficiently obvious, how prepoſterouſly Topics are generally uſed in Tooth-achs.

Various Errors are, alſo, committed, with reſpect to the Cure of cutaneous Diſorders of the Face and Head. Thus nothing is more cuſtomary among the Vulgar, than the curing Achors and Scal'd-heads in Children, with various Lotions, Lixiviums, Decoctions, and Ointments prepared with Sulphur, Oil of Olives, and other unctuous Subſtances. But I have experimentally found this Method productive of the worſt Conſequences, ſince it is generally ſucceeded by Epilepſies, Inflammations, and Suppurations of the Eyes, an Epiphora, a Gutta Serena, violent Peripneumonies, Aſthmas, and other Diſorders of a like Nature. We are, therefore, in ſuch Caſes, to deal very cautiouſly with external Applications, for fear of obſtructing the Perſpiration in the Parts; nor are we ever to preſcribe them, without at the ſame time exhibiting internal Medicines for correcting and evacuating the peccant Humours. We are never externally to apply moiſt, oleous and aſtringent Subſtances; and if Topics are indicated as proper, antimonial Balſam of Sulphur, diſſolved in camphorated Spirit of Wine, and mixed with Oil of ſweet Almonds, will produce excellent Effects, by mollifying, diſcuſſing, and reſiſting farther Putrefaction. In Venereal Puſtules, and the Gutta Roſacea, we are, alſo, to deal very cautiouſly with Repellents, and ſuch Medicines as conſtrict the Pores of the Skin, ſince, by their means, I have often obſerved the ſaline acrid Serum precipitated to the Coats of the Eyes, and an Ophthalmy produced. How much Topics are abuſed in the Cure of an Eryſipelas, is too obvious; for, certainly, this Diſorder requires a cautious Application of Externals, particularly when near the Brain and Origin of the Nerves; and it is not free from Danger, eſpecially in ſcorbutic Patients, as Practitioners ſufficiently know.

Practical Authors furniſh us with numberleſs Inſtances of the bad Effects of Topics in the Cure of an Eryſipelas. Thus *Rolfinckius*, in *Method. curand. Affect. Capit.* makes mention of a Quinſey produced by the unſeaſonable Uſe of Repellents in the Cure of an Eryſipelas of the Head. *Aquapendente*, alſo, in *Lib. de Tumoribus*, juſtly orders, that, in an Eryſipelas of the Face or Head, we are neither to uſe Topics before, nor after Purging; for, by cold Subſtances, the Matter may be repelled to the Brain, and produce a Phrenitis; or to the Fauces where it induces a Quinſey. In ſuch Caſes all Cataplaſms, all unctuous, moiſt, and aqueous Subſtances are highly prejudicial. But we are rather to uſe dry Subſtances alone, ſuch as Bags prepared of emollient and diſcutient Herbs, that the Tranſpiration may remain free. Sometimes, however, camphorated Spirit of Wine, mixed with Eſſence of Caſtor, or Oil of Nutmegs, mixed with volatile Salt of Worms, Nitre, and a little Opium, uſed by way of Ointment, produce very ſalutary Effects. Thoſe ſeem to be in a great Error, who, for the Cure of a Gutta Roſacea, and Puſtules, uſe ſublimate Mercury, or a weak Water of precipitate Mercury, ſince theſe, when received into the Pores, greatly diſpoſe to violent Heads-achs, Hemicranias, and Looſeneſs of the Teeth. But the Intention will be far better anſwered by Eſſence of Benjamin, mixed with Magiſtery of Lead, Camphire, Sugar of Lead, Frogs-ſpawn-water, and Elder-flower-water.

When the Fleſh of the Gums is ſo corroded, that the Roots of the Teeth appear bare, the Diſorder is generally thought to proceed from a Relaxation of the Fibres. Hence 'tis a common Cuſtom to prevent this Misfortune by the external Uſe of Aſtringents, ſuch as the Eſſences of Maſtich and Tormentil, Alum, and the Eſſence of *Japon* Earth, which, inſtead of being beneficial, are rather hurtful; for the Diſorder is an Atrophy, and proceeds from a Defect of the nutritive Juice, in conſequence of an Obſtruction of the minute and numerous Arteries of the Gums. Now, if

this Obſtruction is confirmed by Aſtringents, the Gums muſt be ſtill more deprived of their fine nutritive Juices. In ſuch Caſes, happier Effects are produced by Decoctions of Wine with Sage, Origanum, Roſemary, Camphire, Nitre, and a ſmall Quantity of the Spirit of Sal Ammoniac. By waſhing the Mouth and Gums frequently with ſuch Decoctions warm, the Veſſels are opened, the Blood and Juices invited, the Fibres of the Gums corroborated, and the Uſe and Vigour of thoſe Parts reſtored.

We now come to conſider the Abuſe of Topics in Diſorders of the Thorax. In thoſe inflammatory Tumors, therefore, of the Lungs, commonly called Pleuriſies, or Peripneumonies, nothing is more cuſtomary than the external Uſe of oleous Ointments, in order to allay the Pain. But I have rarely ſeen happy Effects produced by ſuch a Practice, ſince, when the Diſorder might at firſt have been diſſipated by internal Diaphoretics and Diſcutients, they hinder its Diſcuſſion, and diſpoſe it to a Suppuration; juſt as in other eryſipelatous Diſorders of the external Parts, theſe Ointments, by obſtructing the Pores, and relaxing the Fibres, invite a farther Defluxion of Humours, and diſpoſe the Part to Suppuration and Exulceration. If, therefore, as it often happens, the Pleuriſy is ſpurious, that is, if an acrid ſaline Serum ſtagnates between the Membranes of the intercoſtal Muſcles, in which Caſe, it is a Species of Rheumatiſm, the above-mention'd Topics will be far more injurious than beneficial, by hindering the Tranſpiration and Excretion of the ſtagnant Matter; which, however, is abſolutely neceſſary to the Recovery of the Patient. Some, in order to allay violent Pain, have a Cuſtom of adding to thoſe, Oil of Henbane, by which means the Pain is, indeed, mitigated, but, at the ſame time, a Drowſineſs, a Languor of the Strength, and a difficult Expectoration ſucceed, which, eſpecially in Old-age, are not without Danger. Beſides, in theſe Diſorders, 'tis cuſtomary, with ſome, to apply Plaiſters, ſuch as the Emplaſtrum Vigonis, mixed with Mercury, Balſam of Sulphur, and Camphire. But, by this means, I have found, that when the Pleuriſy has been ſpurious, and affected the intercoſtal Muſcles and Membranes, but not the Lungs, the Pain has, indeed, been diſſipated, but the Matter has been conveyed to other Parts; and I have frequently known the Matter repelled to the Subſtance of the Lungs, where it has produced Impoſtumations ſufficiently chronical and dangerous.

In my Opinion, therefore, in all theſe inflammatory Diſorders of the Thorax, we are either abſolutely to abſtain from all Topics; or, if any are to be admitted, camphorated Spirit of Wine, mitigated, and rendered anodyne by an Addition of Caſtor, Saffron, and diſtilled Oil of Nutmegs, uſed by way of Ointment, ſeems preferable to all others. There are, however, ſome Diſorders in which pinguious Ointments, thoſe poſſeſſed of an anodyne Quality, and ſuch as relax the Fibres, produce happy Effects, though they are rarely uſed. A Diſorder of this Kind is the dry Chincough, in which, not ſo much the Quantity, as the peccant Quality of a thin and acrid Matter ſtimulates the pneumonic Nerves and Thorax to violent convulſive and concuſſive Motions, in which Caſe 'tis neceſſary to allay theſe Motions, and relax the conſtricted Parts of the Thorax, not neglecting, at the ſame time, to inſpiſſate and correct the thin and acrid Humour. This Species of Cough is frequently very obſtinate, and raging violently at certain Seaſons, principally attacks Children and Infants. I have frequently ſeen good Effects produced by anointing the whole Breaſt with an Ointment prepared of the Unguentum Potabile Rubrum, Sperma Ceti, Badger's Fat, Ointment of Poplar, Oil of Aniſe, and Camphire.

We ſhall now ſubjoin ſomething with reſpect to Topics, in a true Phthiſis, or Exulceration of the Lungs: We have Inſtances of phthiſical Patients who bear ſome Ointments and Plaiſters well, but others not without Injury. The Nature, therefore, of every Phthiſis, and its particular Cauſe, are to be inveſtigated. Topics are not, therefore, uſeleſs, when the Lungs are full of hard Tubercles, which, for the moſt part, gradually come to a Suppuration: For this Purpoſe the Plaiſters ought not to conſiſt of too hot Subſtances, nor of thoſe of too rough and unctuous a Kind; for the former increaſe the Pain and Inflammation, and the latter hinders a free Perſpiration. The beſt of all is *Rulandus*'s Emplaſtrum Diafulphuris, without the Colophony, which is prepared of amygdalated Balſam of Sulphur, Myrrh, Earth of Vitriol, Wax, and Turpentine, to which Bdellium may be added. This Plaiſter, by its corroborating Quality, diverts the Impetus of the Humours from the Breaſt, and diſcuſſes the Stagnation of the Juices. But 'tis to be obſerved, that, in Diſorders of the Lungs, Plaiſters are not to be applied to the Sternum, thro' which they cannot penetrate, but rather to the Back and Sides, becauſe there the Pores are more open, the Blood more copious, and the Veſſels more numerous, in conſequence of which, the ſubtile and ſalutary Parts of the Plaiſter are the better received and admitted.

We now come to conſider ſome Diſorders of the Stomach, in which Topics are beneficial, provided they are duly applied. No Pain is more cruel than that which is fixed in the Right and Leſt Orifices of the Stomach, which are highly ſenſible; and is generally called a Cardialgia. In this Diſorder, 'tis cuſtomary to take internally various Remedies for mitigating the Pain, and externally to anoint the Region of the Stomach with ſome ſpirituous Liniment, or an Ointment prepared of carminative and anodyne Ingredients. But this Method does not produce the deſired Effect; for ſince the Pain is fixed in a very ſmall Part, that is, in theſe nervous Orifices, it is ſufficiently obvious, that a penetrating and efficacious Medicine is to be applied as near as poſſible to thoſe Parts. Now, if either a Plaiſter, Liniment, or Ointment, is applied to the whole Region of the Stomach, a ſmall Quantity of any of them can only penetrate to the Orifices of the Stomach. Beſides, as 'tis certain from Anatomy, that the ſuperior Orifice of the Stomach is nearer the Back and Vertebræ, ſince it is ſituated hard by the Aſpera Arteria, it is ſufficiently obvious, that the Medicines applied to the Pit of the Stomach can by no means penetrate to it. Such Remedies are, therefore, to be applied to the Back about the eighth or ninth Vertebra, before they can affect it. But if the Right Orifice is affected, we are to apply our Remedies under the Stomach, towards the Right Side. But in Caſes of this Nature, we are by no means to uſe too volatile Subſtances, ſuch as Spirits; nor unctuous and emplaſtic Subſtances, which operate too ſlowly, but rather a pretty thick Liniment, in the Form of a Plaiſter, and prepared of Treacle, Saffron, Oil of Nutmegs, Camphire, *Peruvian* Balſam, and Oil of Henbane. I have often found this Preparation afford Relief, and where it proves unſucceſsful, nothing is to be expected from other Topics.

Practitioners well know, that in a Weakneſs of the Stomach, Vomitings and Nauſeas, nothing is more common, than to apply Ointments, or oval ſtomachic Plaiſters under the Sternum. But, upon diſſecting Carcaſſes, we find, that only a very ſmall Portion of the Stomach, but the Liver, the Inteſtinum Colon, and the ſmall Inteſtines are ſituated there. The Stomach rather inclines to the Left Side under the Ribs, where, at leaſt, three Parts of it are ſituated towards the Spine. If, therefore, we apply generous and penetrating Medicines to the ſpurious Ribs of the Left Side towards the Back, we ſhall find far more happy Effects produced on the Stomach by them.

The violent Pain ariſing from a Stone ſticking in the Beginning or Middle of the Ureters, alſo, demands the Uſe of Topics; but they muſt be applied with great Caution; for 'tis ſufficiently known, that a pretty large Stone, whilſt lodged in the tubular Subſtance of the Kidneys, creates no Uneaſineſs; but creates an intolerable Pain, when it falls into the narrow and ſenſible Ureters. Hence we perceive, that Topics for this Purpoſe ought not to be applied to the Loins where the Kidneys are ſituated; but according to the Direction of the Ureters, that is from the Loins to the Groin. But even in this, a violent Error is generally committed, whilſt, with the Ointments, moſt Perſons mix hot forcing Subſtances, ſuch as the Oil of Amber, the Spirit of Turpentine, and the Oil of Juniper; which Practice is productive of very bad Effects. Many, indeed, intend, by theſe hot Subſtances, to force the Paſſage of the Stone thro' the Ureters; but it is, by this means, rather fixed, and more violent Symptoms, ſuch as a Suppreſſion of Urine, Vomitings, and Convulſions, are excited: For that the Stone remains fixed in the Ureter, is not ſo much owing to the Bulk thereof, as to the painful Spaſm of the Ureter; and, as by the Aſperity of the Stone, the nervous Fibres are generally irritated, there happens an Influx of the Spirits, and Pain accompanied with Spaſms and Conſtrictions; and the more intenſe the Pain is, the more narrow and contracted the Paſſages are. Now, if ſpirituous hot Subſtances are, in ſuch a Caſe applied, we excite an Influx of the Blood and Spirits, fix the Stone more firmly in the Part, increaſe the Pain, and induce many terrible Symptoms. 'Tis not, indeed, to be denied, that where there is neither Pain nor Spaſms, or where there is a certain Laxity, or Want of Tone, in the nervous and membranous Fibres of the Kidneys, ſuch Things, externally applied, becauſe they ſtrengthen the Tone of the Parts, promote a Diſcharge of the Urine, but they are by no means to be uſed when there is any Pain or Spaſm, in which caſe we are rather to uſe emollient paregoric and anodyne Oils, ſuch as the Ointments of Poplar, Henbane, Poppy-ſeeds, and white Lilies, Badger's Fat, and Camphire, which gives them a penetrating Quality. With theſe the Region of the Ureters is to be frequently rubbed and anointed with a warm Hand; for theſe Subſtances, by checking the Impetus of the Spirits, and relaxing the conſtricted Fibres of the Ureters, occaſion a far more eaſy and expeditious Paſſage for the Stone. For this Reaſon, ſitting in a Bath is highly beneficial, and ſometimes affords inſtantaneous Relief.

In exceſſive Diſcharges of the Menſes, and involuntary Effuſions of Seed in Men, 'tis cuſtomary to apply to the lumbar Region, where the large Ramifications of Blood-veſſels are ſituated, and freely expoſed, ſuch Medicines, as, in ſome meaſure, check the Impetus of the Blood to the genital Parts; for it is of great Importance, what Medicines are uſed on ſuch an Occaſion, and at what Time they are applied; for I knew a Woman, who, when after forty Years of Age, in an immoderate Flux of the Menſes, had a Plaiſter applied to her Loins, conſiſting of the Frog's-ſpawn Plaiſter, mixed with Sugar of Lead, and Oil of of Henbane; but, from that time forth, her Menſes never returned to the great Detriment of Health. We are, alſo, carefully to abſtain from all things actually cold, and much more from Narcotics; becauſe

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becauſe all theſe, by checking the Blood, if it tends too much to theſe Parts, produce a palliative Cure; but bring on much worſe Misfortunes, ſuch as Inflammations of the Kidneys, convulſive Colics, and ſpaſmodic Diſorders of the Abdomen. Hence, 'tis the ſafeſt Method, eſpecially in Evacuations of Blood, totally to abſtain from theſe Topics, and rather carry on the Cure by internal Medicines.

We now come to conſider ſome Diſorders which proceed from a Relaxation, Reſolution, or Want of Tone and Strength in the Ligaments; ſuch as the Falling down of the Fundament in Infants, and of the Uterus in Women. Phyſicians and Surgeons, in conſequence of the Relaxation, generally treat theſe Diſorders with Aſtringents; and, for that Purpoſe, foment and cheriſh the Parts affected with aſtringent Decoctions. But as this Prolapſus, or Falling down, does not ſo much proceed from a Relaxation of the Uterus, or Inteſtinum Rectum, as from a Relaxation of their Ligaments, on account of the Congeſtion and Accumulation of the Juices there, ſo every one muſt perceive, that this Method is idle and ineffectual, becauſe theſe external Aſtringents cannot penetrate to the Ligaments themſelves. Hence, in a Falling down either of the Uterus itſelf, or of the Vagina, *ſuch Things, immediately applied* to the Uterus, are of no Efficacy. But rather the inguinal Region is to be cheriſhed with balſamic and penetrating Liniments and Plaiſters, which, being not ſo much poſſeſſed of an earthy Stypticity, as of a ſpirituous corroborating Quality, reſtore Vigour, Motion, and Tone, to the moiſt and relaxed Parts. But 'tis here to be obſerved, that as in all other Caſes, ſo, alſo, in theſe, Topics alone are not ſufficient, but that internal Medicines are more univerſally neceſſary in all internal, and even external, Diſorders of the Body. I do not, however, reject Fumigations, and Fomentations of Wine prepared with aromatic Herbs, ſuch as are poſſeſſed of a volatile, oleous Salt, and a certain earthy Principle, by which theſe Parts may be immediately affected, ſince the Force of Fumigations penetrates intimately, as do, alſo, the Effluvia ariſing from Baths.

With reſpect to the blind Hæmorrhoids, it is ſufficiently known, that great Uneaſineſs is produced by this Tumor of the hæmorrhoidal Veins ariſing from the too great Afflux and Stagnation of the Blood, or of a viſcid Serum. For the Cure of this Diſorder, Phyſicians and Surgeons have invented numberleſs Medicines, eſpecially Topics; but how much they all fall ſhort of their Intention, is too well known to the miſerable Patients; for the Aſtringents recommended rather obſtruct the Humours which produce the Tumor; on the contrary, emollient and anodyne Subſtances, relax the Parts, and invite a farther Afflux of the Humours; whilſt acrid Medicines corrode the Parts, and generally diſpoſe them to malignant Ulcers, and even Fiſtulas. The Skill, therefore, of the Phyſician conſiſts in diſtinguiſhing the Uſe of theſe according to Circumſtances, and knowing what he ought, and what he ought not to do; for, if the Pain is exceſſive, anodyne and emollient Subſtances are beneficial. Hence, Linſeed-oil alone, applied in a ſufficient Quantity, excellently mitigates the Pain. If the Tumor is troubleſome by its Bulk, then not ſo much earthy Styptics, as Corroboratives, are to be uſed, ſuch as Fomentations of Wine prepared with Maſtich, Amber, Roſe-flowers, Balauſtines, Frankincenſe, and Yarrow. Nor are Fumigations, in ſuch Caſes, to be excluded, eſpecially ſuch as are prepared of Things impregnated with a volatile, oleous Salt, the Nature and Virtues of which are, to inſinuate themſelves deeply, to ſtrengthen the Pores, and diſſipate the exceſſive Humidity. Hence, alſo, the Sea-mice (a Sort of Shell-fiſh), whoſe peculiar Virtues are at preſent ſo much extolled, act in no other manner, than other Fumigations impregnated with a certain volatile, oleous Salt. From what has been ſaid, I think 'tis ſufficiently obvious, how prepoſterous a Practice it would be, when the Pain is greateſt, to uſe aſtringent, cold, or acrid Subſtances; or if, when there is a violent Tumor without Pain, we ſhould apply emollient, anodyne, and relaxing Subſtances.

Here occurs a Queſtion to be diſcuſſed; which is, Whether, in exceſſive Effuſions of Blood or Lymph from the Uterus, Injections may be properly uſed, eſpecially ſince we find from Experience, that they are with great Advantage uſed in exceſſive Fluxes of the Semen? But as the Vulgar are of Opinion, that Fluxes ought only to be ſtopt by Aſtringents, ſo nothing is more dangerous, than to attempt the checking of exceſſive Diſcharges of this kind by external Injections poſſeſſed of an aſtringent Quality. I remember a Woman, who, when labouring under an exceſſive Diſcharge of the Menſes, by an Injection of the Decoction of Yarrow impregnated with Alum, contracted an Ulcer, accompanied with a Conſumption and hectic Fever, which prov'd mortal to her. We are, therefore, to deal very cautiouſly with Injections, ſince they do more Harm than Good.

We now come to conſider the Diſorders of the Joints: And certainly, if Topics are in any Caſes abuſed, they are ſo in arthritic and gouty Pains; for, becauſe the Diſorder lies in the external Parts, many are of Opinion, that the Remedy is immediately to be applied to the Part affected, that they may the ſooner reach the Cauſe of the Diſeaſe. But in this they are greatly miſtaken; for Topics are not, in theſe Diſorders, ſo requiſite, but the Pain may be mitigated without them; for we learn from Experience, that without any Topics, by internal Medicines alone, oppoſite to the morbific Cauſe, the Violence of theſe Pains may, in Proceſs of Time, be not only mitigated, but, alſo, totally removed. But we are, above all things, to take care, that Repellents, eſpecially in the Beginning of the Diſorder, be not uſed; for theſe diſturb the Motion of Nature, which is from the Centre to the Circumference, repel the peccant Matter inwards, and excite violent Symptoms. *See Drabizius de Scorbut. Tit. de Arthrit.* In the Beginning of a Gout, I know the Application of a Plaiſter, compoſed of the White of an Egg and Alum, in a plethoric Man, produce, in one Night's time, a lathargic Diſorder, which deſtroy'd the Force of his Genius, and the Strength of his Memory, all his Life after. *Hagendorn*, in *Cent. 1. Hiſt. 28.* gives us a memorable Inſtance of a Merchant, who, labouring under a ſcorbutic Tumor, had an Epithem prepared of diſtilled Waters, Ceruſs, and Camphire, applied to it, by which his Pain was alleviated, but he loſt his Speech, and the Uſe of his Left Arm. With no better Succeſs is the preſent Practice, of anointing the external Parts with camphorated Spirit of Wine. It is hardly poſſible to enumerate the Misfortunes which may be produced by this Remedy, uſed without any reſpect to the Patient, and his Circumſtances. Thus, by the Application of it to gouty Feet, I have frequently obſerved Cardialgias, convulſive and epileptic Motions of the Limbs, Palſies, and other terrible Symptoms, excited. 'Tis, alſo, certain from Experience, that all Medicines are not beneficial to all Patients, ſince ſome Topics remove the Pain in ſome, and increaſe it in others, whilſt others are relieved by ſpirituous Liniments, others by anodyne Plaiſters, and others by Cataplaſms prepared of Milk, and the Crums of Bread, whilſt none of all theſe Remedies agree with others.

The Cauſe of theſe particular Effects is not ſufficiently adverted to, and inveſtigated, ſince 'tis ſufficiently known to Surgeons, that all Patients cannot equally bear the ſame thing in external Wounds. But the Cauſe of this is not ſo much the peculiar Diſpoſition of the peccant Humours, as the tenſive and tonic Conſtitution of the Fibres, Pores and Veſſels of the Skin; for all the Parts, eſpecially the Emunctories and Strainers, have their peculiar Strength, Tone, Tenſion, and Dilatation, which Species of Motion, ſo highly neceſſary to the Secretions and Excretions principally depend upon the Influx of the animal Spirits, and the Tenſion of the nervous Membranes. Of what Kind, therefore, this Influx of the animal Spirits, and Tenſion of the nervous Membranes, is in every Patient, in all Diſorders, and their various Stages, ought to be diligently conſidered by Phyſicians, in the Application of their Topics; for every one ſees, that when the Pores are conſtricted by Pain and Spaſms, hot and ſpirituous Subſtances are by no means proper, but rather ſuch Medicines as gently relax the conſtricted Parts. On the contrary, if there is too great a Relaxation after the Pain, which appears from the Tumor, and the Decreaſe of the Pain, all moiſt, unctuous, and anodyne Ointments are very injurious; in which Caſes we are, therefore, rather to uſe ſpirituous nervous Liniments. And tho' Topics, ſometimes, are beneficial in allaying Pain, and mitigating the Fever, yet they do not always produce the ſame happy Effects in the ſame Patients. In a Word, the ſtronger Nature is in expelling, and the greater the Strength of the Body, and of the internal Motion, are, the leſs Danger Topics, if decently applied, induce. But, if the Vigour of the Motions has ceaſed, if the Patient is old, or afflicted with a Cachexy, Topics are abſolutely to be rejected; for the principal Intention of the Phyſician is not, by Topics, to hinder the Evaporation of the peccant Matter, but to promote it; and, ſince great Judgment is neceſſary to this, it is ſafeſt to abſtain from all Topics, to commit the whole Cure to internal Medicines, and keep the Parts affected in a gentle Heat.

I have, alſo, obſerved, that the Generation of Tophs, which principally happen in a fixed Gout, is, for the moſt part, owing to an incautious Application of Topics, eſpecially thoſe of the ſtupefying and refrigerating Kind. Thus *Wedelius*, in his *Tract. de Medicament. Facultat.* informs us, "that many arthritic Pa-"tients have ſuffered much, have had their Wandering converted "into fixed Gouts, and many Tophs formed, by uſing unctuous "and pinguious Plaiſters." Hence *Galen*, in *Method Medend. Lib. 4. Cap. 3.* tells us, that in the Gout, Tophs are produced by a thick and glutinous Humour, which is not gradually digeſted, but ſuddenly dried by violent Remedies. And *Fernelius*, in *Conſil. 12.* obſerves, that Gout Pains are produced by the ſame means. But I am of Opinion, that all Topics are not to be diſcarded in external Pains of the Joints; for when the Pain is inveterate, and accompanied with a certain Torpor, and Inſenſibility, which frequently happens in Old-age, then after checking the internal Ebullition of the Blood, we are, by nervous and balſamic Liniments, to corroborate the Nerves, and invite the Influx of the nervous Fluid into the weakened Parts.

We muſt not forget the common Practice of applying live Earthworms to the Parts affected in a wandering ſcorbutic Gout. Great Encomiums are beſtowed on this Remedy, by practical Phyſicians, eſpecially by *Wierus*. And 'tis certain, that on account of the volatile, abſterſive, and nitro-ſulphureous Salt theſe Animals contain, they are of an excellent diſcutient and ſedative Virtue, which manifeſts itſelf not only internally, but, alſo, ex-

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ternally in various Kinds of Pains, and even in the Lues Venérea itſelf. Yet great Caution is requiſite in the Application of theſe Animals; for though, in the moſt cruel Pain, when the Fluids are in Motion, the Strength entire, and the Patient young, theſe actually cold Subſtances produce happy Effects, yet they produce quite contrary Effects in a fixed inveterate Gout.

We ſhall ſubjoin ſomething more, with reſpect to an Eryſipelas; for the Cure of which, moſt Surgeons and Phyſicians have immediate recourſe to Topics, tho' the Errors ariſing from that Practice have been often expoſed. But I would have it obſerv'd as a general Maxim, that an Eryſipelas, ariſing from an external, ought to be diſtinguiſhed from that ariſing from an internal Cauſe. In the former, produced by Contuſions, and other Wounds, Topics are not generally prejudicial; but when the Diſorder proceeds from an Orgaſm of the Humours, and a febrile Impetus, an heterogeneous Matter, generally of an acrid and corroſive Nature, is protruded to the Surface of the Body; in which Caſe we muſt be very cautious, ſince the Matter is eaſily repelled, and ſince by thoſe Topics, which, in other Caſes, prove beneficial, we may do an irreparable Injury to the Patient, by repelling to the internal Parts the peccant Matter, which then acquires the Nature of a Poiſon; ſee *Frid. Hoffman. Diſſert. de Converſione Morbi Benigni in Malignum.* Nothing is more common, than by Aſtringents, ſuch as the White of an Egg, mixed with Alum, to render a ſlight Eryſipelas fixed and profound, and to excite malignant Ulcers; Inſtances of which daily occur in Practice. Hence thoſe Phyſicians act prudently, who treat all the Species of Eryſipelas with Internals, applying only, externally, Bags full of paregoric Herbs, which, by their mild Influence, keep the Pores open, relax ſuch as are conſtricted, and cheriſh the Parts.

We muſt, alſo, obſerve, that Surgeons commit a terrible Error in applying hot Cataplaſms, prepared of Bean-meal, Liquorice-root, emollient and diſcutient Herbs, and proper Waters: For ſince by the Heat the Moiſture is dried up, and the Matter is more firmly impacted in the Skin, and its Pores, ſo that it can hardly be remov'd by a Knife, the Buſineſs of Tranſpiration is greatly injur'd; and the Eryſipelas, which by proper Meaſures might have been diſcuſs'd, is converted into an Abſceſs or an Ulcer: We are, therefore, to endeavour, to preſerve a free Reſpiration in the Parts affected; which can neither be obtained under a cold State of the Air, an intenſe Heat, or a great Load of Clothes, but under a moderate Heat, which excellently encourages Perſpiration.

In like manner Topics ought to be cautiouſly applied to Buboes, becauſe by Repellents they are render'd malignant. Much leſs are we to apply Topics of an aſtringent and refrigerating Kind to malignant and critical Buboes, becauſe ſuch a Practice is highly dangerous. Critical Buboes, when the Humours are conveyed to the Glands, are known by the Patient's retaining his Strength, by their happening on the critical Days, and by the previous Signs of Concoction in the Urine. At this Time all Repellents are highly prejudicial; for, as *Hippocrates* juſtly obſerves, in a perfect Criſis, no Change of the Patient's State is to be attempted, but the whole Buſineſs is to be left to Nature. Sometimes a Bubo ariſes from a Redundance of Blood, in which Caſe, according to *Avicenna*, *Oribaſius*, and others, we are by no means to uſe Repellents. But when a Bubo tends to Suppuration, nothing is more beneficial than the Application of the Diachylon plaiſter with the Gums, mixed with Opopanax.

'Tis juſtly to be doubted, whether Topics are proper in the Small Pox; only we may affirm in general, that, as this Diſorder is a critical Evacuation, great Caution is requiſite. However, if before the Eruption the Patient is afflicted with a Delirium, we may with Advantage apply to the Forehead Spirit of Roſes mix'd with Camphire. But, during the Eruption and the Suppuration, I am of Opinion, that we ought to abſtain from all Liniments. In the Decline, and at the Time of the Exſiccation of the Diſeaſe, when the Force of the Diſorder is ſubdued, I can not diſapprove of Oil of ſweet Almonds, mix'd with Camphire and Sperma Ceti, in order to prevent the Deſquamation of the Skin, and correct the Acrimony, which generally lies pretty deep. See *Frid. Hoffman. Diſſert. de Variolis epidemice graſſantibus.* For this Reaſon we are cautiouſly to proceed with Topics of this Kind, ſuch as Spirit of Wine impregnated with Myrrh, and Sugar of Lead mixed with Roſe-water.

The Itch, which is a puſtulous Exulceration of the Skin, more or leſs moiſt, is generally thought incurable without the Uſe of Topics. Hence, neglecting all internal Remedies, they forthwith have recourſe to various ſulphureous and mercurial Liniments, which they apply either to the whole Surface of the Body, or only to the Joints, tho' frequently with a very conſiderable Danger both to Life and Health; for it is never ſafe by Topics to cure external Diſorders, proceeding from an internal Cauſe; but as Nature expels the heterogeneous and morbid Matter, the Phyſician ought to do the ſame, and never counteract the Intentions of Nature, which is generally done by Repellents, externally applied. Hence I am of Opinion, that the Cure of theſe cutaneous Diſorders, ought not only to be begun, but, alſo, finiſh'd by ſuch internal Medicines, as correct and diſpoſe the peccant Matter to Excretion, and at the ſame time eliminate it. To this Claſs of Medicines belong not only Diaphoretics, emollient and laxative Infuſions, but, alſo, if the Itch is inveterate and malignant, Preparations of Mercury and Antimony. Then, for the better Conſolidation of the Skin, and the Reſtitution of its Beauty, we may uſe Baths, drying, ſulphureous, and ſaturnine Ointments. But we are always to abſtain from external mercurial Liniments, which can never be us'd without Danger, as is obvious from numberleſs practical Obſervations.

As for mercurial Liniments and Fumigations us'd to excite a Salivation in the Lues Venerea, it is ſufficiently known, what violent Symptoms are brought on by this means, and how precarious this Method of curing ſo obſtinate a Diſorder is. I am certain from Experience, that the Lues Venerea may be happily remov'd by proper Preparations of Mercury and Antimony, and Decoctions of the Woods exhibited internally in a due manner, without any external mercurial Applications, and often without exciting a Salivation, or any Train of uneaſy Symptoms.

With reſpect to Topics applied to paralytic Parts; tho' theſe excellently aſſiſt the Operation of internal Remedies; yet they ought to be properly choſen, and cautiouſly applied. Thoſe are, in my Opinion, greatly miſtaken, who think that only Fats, Lards, and unctuous Liniments, ought to be applied either immediately to the Parts affected, or to the Spine of the Back; for theſe Subſtances obſtruct the Pores, and ſtill more relax the Fibres, whoſe Tone is already deſtroy'd; by which means they diſpoſe the Parts to a Tumor. On the contrary, ſpirituous, hot and ethereal Oils alone, do not produce the deſir'd Effect, ſince moſt of them, in conſequence of the Subtility of their Parts, fly off in the Air, and leave the nervous and muſcular Fibres too rigid. This Intention is better anſwer'd by Ointments prepar'd of the Fats of Animals, and the diſtil'd Oils, ſuch as thoſe of Rice, Marjoram, Lavender, Juniper, Cloves, and Roſemary; for the Tone of the nervous Parts ought to be render'd natural, ſo that there be neither too great a Relaxation nor Conſtriction, too great an Humidity or Dryneſs. Beſides, 'tis to be obſerv'd, that in a Palſy ariſing from a Diſorder of the Spinal Marrow, and Origin of the Nerves, theſe Medicines are not to be applied to the Parts deſtitute of Senſation and Motion; but to the Source of the Diſorder, which is lodg'd in the Spinal Marrow. But 'tis quite otherwiſe in that Species of Palſy, in which the Motion, but not the Senſation of the Part is deſtroy'd, which happens frequently to Metal-diggers; in which caſe 'tis of no uſe to anoint the Spinal Marrow, but the Part affected is to be frequently fomented and cheriſh'd with the above-mention'd Medicines.

With reſpect to œdematous Tumors, which frequently ſeize the Feet; great Caution is, alſo, in this Caſe, requiſite, as to the Application of Topics, ſince they who treat them with Baths, commit a terrible Error. Thus I have ſeen cachectic Perſons, by immerſing their Feet in warm Water, contract, in one Nights time, a conſiderable Tumor of them, which could not afterwards be eaſily remov'd. The Reaſon of this is obvious; for theſe Baths by their Moiſture, which by means of the Heat inſinuates itſelf into the Pores, renders the weaken'd Fibres ſtill more lax, ſo that the Humours flow down, and are not quickly again receiv'd into the Veins, and lymphatic Veſſels. The ſame Effects are, alſo, produc'd by thoſe who attempt to diſſipate ſuch Tumors by Ointments and Plaiſters, for a Reaſon eaſily deduc'd from what has been ſaid. Some have a Cuſtom of tying diſcutient Herbs about the Feet, ſuch as the greater Celandine, Fumitory, Wormwood, and Rue; but if theſe are moiſt and cold, they often increaſe the Tumor, inſtead of removing it. 'Tis, therefore, better to abſtain from all theſe, and apply proper Bandage to the Feet, eſpecially towards the Evening, when ſuch Tumors are always obſerv'd to increaſe, that by this means the Fibres may be corroborated and ſtrengthen'd. Fomentations of ſtrong Vinegar, mixed with Eſſence of Amber, and pour'd upon ignited Bricks, have often been found productive of happy Effects.

'Tis cuſtomary, in various Diſorders, to apply Epithems and Plaiſters to the Pulſe in the Wriſts. This Practice, tho' not to be diſcourag'd in itſelf, is nevertheleſs often abus'd, eſpecially by Nurſes, and the common People, who, whether a Diſorder is of the cold or hot Kind, commonly have recourſe to the celebrated Aqua Carbunculi, which they think of ſo incredible Efficacy to reſtore Strength. But every one muſt perceive, that this is by no means proper in a burning or acute Fever, or in the Heat of an intermittent Fever; in which Caſes rather penetrating Acids, ſuch as Citron-juice, and Vinegar of Roſes, are proper. Epithems and Plaiſters are, alſo, applied to the Wriſt, in order to remove the febrile Paroxyſms in Intermittents; for which Purpoſe, they mix Alum, Vinegar, Rue, the greater Houſleek and Spiders Webs. They, alſo, make a Plaiſter of Turpentine, Alum, and Powder of Spiders, which are often of great Service in mitigating the Paroxyſms, and even in totally removing them, if the greater Part of the febrile Matter is evacuated.

The Manner in which ſuch Medicines operate, is ſomewhat difficult to be conceiv'd; and ſuch an Experiment, in my Opinion, illuſtrates the Generation of Fevers of this Kind; for the Heart

and

and Arteries, which have their proper Nerves, and ſyſtaltic and diaſtaltic Motions, are the Inſtruments, by which the intenſe Motion of the Fluids is perform'd. Hence ſuch things as in ſome meaſure check and hinder the exceſſive Motion of the Spirits to theſe Parts, when immediately apply'd to the Arteries, muſt neceſſarily for ſome time ſtop the febrile and intenſely hot Motion of the Blood. *Frederic Hoffman.*

TOPINARIA. A Species of Tumor in the Skin of the Head. The ſame as TALPA.

TORCULAR HEROPHILI, in Anatomy, is the Place where the Sinuſes of the *Dura Mater* meet.

TORCULAR, in Surgery, is the *Tournequet.*

The Tournequet is a ſort of Bandage, which is very neceſſary in ſuppreſſing copious Hæmorrhages, particularly after the Amputation of the larger Limbs; and conſiſts of ſeveral Parts; 1. A plain Roller, an Inch in Breadth, and a *Paris* Ell in Length; 2. A ſmall cylindrical Piece of Wood; 3. A rolled Bandage, about the Thickneſs of two Fingers, and four in Length; 4. Long Compreſſes about the Breadth of four Fingers, for encompaſſing the Leg or Arm, to which the Roller is to be applied; laſtly, 5. A ſquare Piece of thick Paper, or ſtiff Leather, about the Breadth of four Fingers.

Let us next conſider the Method of applying the *Tournequet.* The rolled Bandage muſt be applied to the Trunk of the wounded Artery lengthwiſe; and the Compreſſes muſt be placed in a contrary Direction, ſurrounding the Arm or Leg like a Ring; then the Roller muſt be twice brought round them, and tied, but ſo looſely, that the Hand may eaſily paſs between it and the wounded Limb. The Piece of Leather, or thick Paper muſt next be introduced with the greateſt Caution, under the Roller, on the external Side of the wounded Leg or Arm; then the ſmall cylindrical Piece of Wood muſt be introduced above the Piece of Leather or Paper, and the Roller twiſted about by it, till it be made ſufficiently tight to ſtop the Bleeding. Then the Stick muſt be fixed, leſt it ſhould untwiſt itſelf; the Wound muſt be treated in a proper manner, and the Profuſion of Blood ſuppreſſed by Aſtringents, by a Ligature, or the actual Cautery, or by any other Inſtruments deſigned for that Purpoſe in Amputations. This Intention being anſwered, the Tournequet may be relaxed or removed, as ſoon as it can be done with Safety and Convenience. When the *Tournequet.* is applied to the Arm, the rolled Bandage ſhould be placed near the Arm-pit, in the internal Part of the Humerus, as the Situation of the Artery requires that Poſition; and the Stick, with which the whole is to be tightened, is to be introduced on the external Part. See *Tab.* XXIV. *Fig.* I. *Let.* K. When the Hæmorrhage is to be ſtopped in the Leg, the *Tournequet* ſhould be applied to the upper Part of the Thigh, or a little above the Ham, according to the Circumſtances of the Caſe. See *Let.* L, M N. But in order to give a diſtinct Idea of this *Tournequet,* it is repreſented ſeparately in *Tab.* XXIV. *Fig.* 2.

In the room of this Inſtrument, *Petit's Tournequet* has been ſubſtituted, who invented and deſcrib'd it in 1718, which has been preferred, becauſe it could be applied without the Help of an Aſſiſtant, which the other required to preſerve its Situation. It might, alſo, be retained upon the Limb, as long as might be thought neceſſary, without obſtructing the Circulation of the Blood in the Part affected; whilſt the other entirely ſtopped the Circulation, and muſt therefore be quickly removed. But its Deſcription is ſo ſhort and imperfect, eſpecially as the Parts of the Inſtrument are not deſcribed ſeparately, that in many Places I could not underſtand it. *Garengeot* has given us another Repreſentation of it; but he, alſo, is obſcure.

I have, therefore, endeavoured to correct it, as is ſhewn in *Tab.* XXVI. *Fig.* 6. AA repreſent the upper Part; BB the lower; C the Screw, all in their proper Size, and made of ſtrong Wood. In the Extremity DD are faſtened two ſmaller Iron Screws, to which a ſtrong Silk Roller or Bandage is to be fixed, being of the ſame Breadth with the Inſtrument, and about twenty Inches in Length, that it may encompaſs the larger Limbs, the other End being to be faſtened to the Hooks at EE. The Extremities FFFF muſt be a little hollowed, that the Roller may lie firm without Danger of being moved, or falling off. G repreſents an Iron Plate, which is there placed to ſtrengthen the Wood. The Wound, therefore, being properly dreſſed, the lower Part of the *Tournequet* BB, being guarded with a thick Bolſter, muſt be applied to the Side oppoſite to the Wound, and the Roller drawn tightly round the Limb, and faſtened to the Hooks at E. Then by turning the Screw C, it may be ſtretched ſufficiently to ſtop the Hæmorrhage, and kept in this Situation as long as may be thought neceſſary.

Garengeot has deſcribed and delineated another *Tournequet* of this Kind, invented by *Morand*; which in many Particulars agrees with that of *Petit*, but principally differing in this Circumſtance, that, inſtead of a ſimple Screw, *Morand* furniſhed his with a compound Screw made of Iron, for quicker Actions, one Turn of which would tighten the Roller more, and conſequently ſooner compreſs the Wound or Artery, than two or more Turns of the Screw uſed by *Petit.* However, *Garengeot* makes ſome Objections to this Inſtrument, and prefers that of *Petit.*

I once ſaw a *Tournequet*, made of Iron, and very heavy, which in many reſpects agreed with that of *Morand*, though in ſome Particulars it differed, by I know not whoſe Contrivance, which is delineated in *Tab.* XXVI. *Fig.* 7. AA, is the lower Plate with many Perforations towards the Edges, by which means a Cuſhion or Bolſter may be ſewed to it. B is the Barrel for receiving the Screw; CC is the ſuperior Plate; D is another Barrel on the ſuperior Plate for receiving the Screw. EE repreſent the Extremities of the ſuperior Plate, one furniſhed with Hooks, the other with Hooks, and a kind of Arch, for fixing the Roller, for compreſſing the Limb, as is done in the *Tournequets* repreſented in *Fig.* 2. and in *Tab.* XXVII. *Fig.* 1. 'Tis a kind of Ring ſurrounding the Barrel in the ſuperior Plate; G is a ſquare or cubical Body, made like a female Screw, for the Reception of the ſmall Screw H; and thus is the larger Screw I, K, kept firm in the Box D, which would otherwiſe eaſily fall down, and remit. L is an Iron Cylinder, which is firmly fixed in the lower Plate, but is looſe in the other, that the upper Plate may be allowed to ſlide freely up and down, as Occaſion may require; it, alſo, ſerves to retain the Plates in the ſame Situation with reſpect to one another.

With Deſign to improve this Inſtrument, I ordered one to be made of Braſs, like that repreſented in *Tab.* XXVII. *Fig.* 1. where the ſuperior Plate is much ſhorter than the inferior, which, being fixed to one Extremity of the upper Plate, is brought round the Limb, and faſtened to Hooks in the other. The Belt muſt, alſo, be paſſed through Openings, made at each Extremity of the lower Plate for that Purpoſe. By this Contrivance the Inſtrument is kept even, and does not change its Poſition on the Motion of the Screw. The Reader may chooſe which of theſe Inſtruments he pleaſes: All of them will anſwer the Intention, for which they were deſigned; only ſome do it ſooner than others.

It may be proper to obſerve here, that aſtringent Medicines, exhibited internally, have little or no Effect in ſtopping Hæmorrhages proceeding from Wounds of the larger Arteries; and they not only create Obſtructions in the lacteal Veſſels of the Inteſtines, Glands of the Meſentery, and other Parts, but, alſo, excite Pains, Inflammations, Fevers, and the like dangerous Diſorders; and therefore we ſhould abſtain from them, rather than uſe them. *Heiſt. Chirurg.*

TORDILIUM.

The Characters are;

The Root is annular and fibrous; the Petals are unequal, Heart-ſhaped, and deeply biſid The Seed is orbiculated, flat, with a raiſed Margin, which is for the moſt part denticulated, and depoſites its Huſk.

Boerhaave mentions ſeven Sorts of *Tordylium*; which are,

1. Tordylium; maximum. *T.* 320. *Caucalis, maxima, Sphondylii aculeato ſemine.* C. B. P. 152. *Au & Seſeli, majus.* C. B. P. 161?

2. Tordylium; minus; limbo granulato; Syriacum. M. U. 37. 40. *Gingidium, foliis Paſtinacæ latifoliæ.* C. B. P. 151. *Caucalis, Syriaca, cum maximo ſemine.* J. B. 3. 2. 86.

3. Tordylium; Narbonenſe; minus. *Tourn. Inſt.* 320. *Boerh. Ind. a.* 68. *Raii Synop.* 266. *Seſeli, Creticum.* Offic. Ger. 894. *Seſeli Creticum minus.* C. B. P. 161. Ger. Emac. 1050. *Tordylium ſive Seſeli Creticum minus.* Park. Theat. 906. Raii Hiſt. 1. 412. *Caucalis minor pulchro ſemine ſive Bellonii.* J. B. 3. 84. HARTWORT OF CANDY.

It is cultivated in the Gardens of Botaniſts; and the Seed, tho' but ſeldom, is uſed.

The Seed of this Plant is Nephritic, Uterine, and Pulmonic: Its principal Uſes are in the Strangury, and Stoppage of Urine. It removes Pain, provokes the Menſes, and promotes Expectoration in Catarrhs. *Schroder.* In the Catalogue of Simples in the *London* Diſpenſatory this Plant is, I know not how, confounded with the *Seſeli Maſſilienſe.*

4. Tordylium; Apulum; minimum. *Col.* 1. 124. *M. H.* 3. 316. *Seſeli, Creticum, minimum.* C. B. P. 161.

5. Tordylium; album; facie Tordylii luteo, Columnæ. *H. C.*

6. Tordylium; folio longo, anguſto; flore albo, magno, ſemine elegantiſſimè & profundiſſimè crenato, albo.

7. Tordylium; Orientale; Secacul Arabum dictum Rauwolfio. *Boerh. Ind. a.* 68. *Secacul.* Offic. *Siſarum Syriacum.* C. B. P. 155. Raii Hiſt. 1. 443. *Siſarum alterum Syriacum.* Park. Theat. 945. *Paſtinaca Syriaca & Secacul Arabum quibuſdam.* J. B. 3. 66. *Paſtinaca Syriaca Rauwolfii, Secacul Arabum & Maurorum quorundam.* Chab. 390. *Apium Syriacum radice ampla eduli.* Hiſt. Oxon. 3. 292. SYRIAN SKIRRET.

It has a tender, ſmooth Root, hoary on the Outſide, and white within, brittle, of the Thickneſs, but double the Length, of a Finger, and diſtinguiſh'd with Nodes or Tubercles, like Warts; it has a pleaſant Taſte, like a Carrot. From this Root ariſe a Multitude of Leaves very much cut and jagged, like thoſe of the Carrot. The Stalks at the Joints are cover'd with the ſame ſort of Leaves, and have their Tops adorn'd with an Umbella of Flowers, like thoſe of the Carrot, but of a pale-yellow Colour. It grows ſpontaneouſly about *Grand Cairo* in *Egypt*, and *Aleppo* in *Syria.* *Raii Hiſt. Plant.*

The Root, in medicinal Uſes, agrees with that of the common *Siſer*, or Skirret. *Dale.*

TORI. The Knots in the Stalks of Plants.

TORMENTILLA. Tormentil. A Name for the *Quinquefolium*; *minus*; *repens*; *luteum*; *flore tetrapetalo.*

TORMENTUM. Pain in general; the Colic; or Iliac Paſſion, in which laſt Senſe it us'd by *Cœlius Aurelianus.*

TORMINA. Gripes. See COLICA.

TORNA SOLIS. Torneſol. See HELIOTROPIUM.

TORNATA URINA. Urine which is thick, muddy, and not tranſparent. *Johannes Anglicus.*

TORNESOL. See HELIOTROPIUM.

TORNEUMATA, τορνεύματα. Shavings, or Raſpings. *Dioſcorides, L.* 1. *C.* 108.

TORPEDO. Offic. Aldrov. de Piſc. 415. Rondel. de Piſc. 1. 358. Jonſ. de Piſc. 18. Charlt. Piſc. 9. Salv. de Aquat. 142. Bellon. de Aquat. 89. Geſn. de Aquat, 988. Raii Ichth. 81. Ejuſd. Synop. Piſc. 28. THE CRAMP FISH.

It is taken in the *Mediterranean Sea.*

It mitigates the Violence of the Pain in an inveterate Headach, being apply'd to the Part; and, alſo, prevents and reſtrains the Prolapſe or Falling-down of the Anus, being in like manner apply'd. *Dioſcorides.*

TORPOR. A Numbneſs, or deficient Senſation.

Of Prædictions from a *Torpor* and *Paralegia.*

By a *Torpor*, we mean a Diſorder of the animal Faculty, attended with a Difficulty of Senſe and Motion, and ſometimes a kind of dull Senſe and Motion of ſome Part.

The Cauſe of this laſt, as we are taught by *Galen, de Cauſ. Symp. Lib.* 1. *Cap.* 5. is an Obſtruction, Incraſſation, or Hebetude of the Nerves, by which means the Spirits are clog'd and hinder'd in their Motion; for the Nerves are render'd dull by cold and groſs Humours, in the ſame manner, as the Air is darken'd and obſcur'd by Dirt, Water and Clouds: Or elſe the Diſorder is occaſion'd by ſome cold Quality, either internal or external. The Cauſes of this kind of *Torpor* maybe, alſo, a Fever Phlegmon, Scirrhus, and a Luxation of the Vertebræ inwards, by which the Nerves, being under a compreſſion, are obſtructed, and the Paſſages ſtraiten'd.

The Cauſes of a *Torpor*, in our firſt Senſe of the Word, or, as it is defin'd, an Affection of the Animal Faculty, with a Difficulty of Senſe and Motion, is a Refrigeration of the Brain, either poſitive, as they call it, or from an Extinction of the natural Heat.

Having thus aſſigned the Cauſe of a *Torpor*, we are next to conſider what it portends in Diſeaſes; for in healthy Perſons it threatens an Apoplexy, according to *Coac.* 476. "Unuſual "*Torpors* and *Stupors*, it is there ſaid, are Forerunners of an "Apoplexy." And, a little after *T.* 478. we read, that "Refrige-"rations and Torpors under apopleƈtic Diſorders are of bad "Signification."

In continual Fevers, then, a perpetual *Torpor* is bad, eſpecially of the firſt Sort, or that of the Mind, which they call a *Stupor*: Such *Torpors* in acute Fevers are quite pernicious, as proceeding either from a Refrigeration of the Brain, or an Extinction of the natural Heat, both which are deſtructive. The Author of the *Coac. T.* 14. pronounces *Torpors* proceeding from Rigors malignant, where he ſays τὰ πολλὰ ναρκώδεα ῥίγεα κακοήθεα, "ma-"ny topornic Rigors are malignant." And, *ibid.* 91. he pronounces a *Torpor* of the Mind, or Stupor, in a Phrenſy, deſtructive; and juſtly, becauſe it is occaſion'd either by a Refrigeration of the Brain, which is a very pernicious Symptom in a Phrenſy, or an Extinction of the natural Heat. *Ibid. T.* 208. 334. he condemns a *Torpor*, and Deafneſs, ſucceeded by a ſmall Diſtillation of Blood from the Noſe: And we may affirm the ſame to be not only ſomewhat difficult and troubleſome, as he pronounces it, but to be abſolutely deſtructive.

Nor is this *Torpor* of the Mind leſs pernicious in an internal Phlegmon, as being occaſion'd by a flummeous Heat, the natural Heat being diſſipated. Of this kind of *Torpor*, perhaps, we read, *Coac* 315. where it is ſaid, that "a Pain ſettled in the "Breaſt with a *Torpor* is bad in a Fever." For it is a bad Sign to ſee the Patient labouring under a *Torpor* from an internal Inflammation, which admits neither of Reſolution, Suppuration, nor Expectoration. With relation to this Caſe, perhaps we find it written, *Coac.* 374. that, "under a Quinſey, a Pain of "the Hypochondrium not critical, attended with an Impotence "and *Torpor*, proves mortal in an occult manner, while the "Patients ſeem to be very quiet and compos'd." A *Stupor*, therefore, or a *Torpor* of the Mind, in acute Diſeaſes, is always fatal.

A *Torpor* in the other Senſe, affecting ſome Part of the Body, and inducing a Dulneſs or Diminution of Senſe and Motion, is never good, unleſs it happens critically, and when the Diſeaſe is concocted. For it is not impoſſible for the Humors to be critically tranſlated from the Veins upon the Nerves, and by that means to induce a *Torpor* upon the Parts which are ſupply'd by thoſe Nerves, in the ſame manner as a critical *Tremor* [ſee that Word] is ſometimes occaſion'd. But ſuch an Event rarely happens, and may eaſily be diſtinguiſh'd by other critical Signs.

The ſame Judgment is to be form'd of a Palſy, Paraplexia, or partial Apoplexy, which are ſometimes of Service in Diſeaſes, the Humour being propelled from the Veins, either to the Spinal Marrow, or to the Nerves of ſome particular Parts, by which a Palſy is occaſion'd. But when theſe Diſtempers proceed from a Diſorder of the Brain in acute Diſeaſes, they are abſolutely pernicious; and, therefore, in recent Wounds, where ſome Parts ſuffer a Reſolution, they indicate the near Approach of Death.

It is not ſo dangerous, after an Apoplexy, for ſome Parts to be deprived of Motion, which kind of Diſorder is by *Hippocrates* uſually called by the proper Name of παραπληξία, or παρὰ πλαγὶν, *Paraplexia*, or *Paraplegia*. It ſometimes happens, that the Matter, which is the Cauſe of the *Paraplexia*, in its impetuous Courſe from one Part to another, induces a paraplectic Reſolution of thoſe Parts, which is ſucceeded by Convulſions. Theſe Mutations are mention'd by the Author of the *Prorrhetics*, *T.* 118. "Morbific Matter, he ſays, communicated by Redun-"dance to the Neck and Head, and cauſing a Reſolution in "theſe Parts after a *paraplectic* Manner, threaten Convulſions, and "a Delirium: It deſerves Inquiry, whether ſuch Diſorders are re-"mov'd by Convulſions. The Patient in ſuch Diſorders is long and "variouſly affected:" Such Mutations, then, are occaſion'd by the various Motions of the Humours, and are agreeable to the Obſervations of *Galen*, who, in his Comment on the Place, ſays, that "he once knew a Perſon affected after this manner, "and obſerv'd him labouring under Mutations of various Sym-"ptoms ſucceeding one another. After thoſe preceding Pains of "the Loins, Neck, and Head, the Patient had one of his Hands "depriv'd almoſt of Senſe and Motion in every Part, after a "*paraplectic* manner, as is here ſaid, tho' it was not a perfect "*Paraplegia*. But a Convulſion, which ſoon ſucceeded, ren-"der'd the Part more ſenſible, and more capable of Motion; "but when the Convulſion ceaſed, the Part grew worſe again "by Degrees. Afterwards the Patient was again ſeized with "Pains of the Loins, Neck and Head, and had a ſudden and "univerſal Increaſe of the Palſy in his Hand, after which "it was again conſiderably convuls'd." All this may be very true, and yet nothing of Certainty concluded or learnt from it; for neither does a ſupervening Convulſion remove a Palſy, nor is the reverſe true; for in whatever manner the Patient becomes *paraplectic*; in acute Fevers, it is always bad.

But what is moſt of all to be dreaded, both by ſound and ſick Perſons from *paraplectic* Affections is an Apoplexy. And this we find confirm'd by *Hippocrates*, 6 *Aph.* 51. "Whoever, "he ſays, in a State of Health are taken with a ſudden Pain of "the Head, and immediately become ſpeechleſs, and ſnore, die "in ſeven Days, unleſs a Fever ſeizes them. *Proſper Alpinus de Præſag Vit. & Mort.*

TORQUILLA. The Wry-neck; a ſort of Bird.

TORQUIS. A Necklace or Collar. *Galen, de ſimpl. Medicament. Facult. L.* 9. informs us, that he had experienc'd the Virtues of a Necklace made of the Jaſper-ſtone, in ſuch a manner, that the Stones reach'd to the Region of the Mouth of the Stomach, in Diſorders of that Part. The Whimſical among the Moderns have, alſo, aſcrib'd great Virtues to Necklaces made of various Materials, in a great many Diſeaſes.

TORREFACTIO. The Roaſting, or Toaſting of Medicines. In Metallurgy it is the Roaſting of Ores, in order to deſtroy their volatile Sulphur, for the more eaſy Extraction of the Metals.

TORSIONES. Gripes.

TORTA. A Paſty; or Tart.

TORTIO. A Strain of the Joints.

TORTUALIS FACIES. A cadaverous Countenance, or Hippocratic Face. *Cœlius Aurelianus* gives this ſort of Countenance the Epithet *Mortuoſa.*

TORTURA. A Spaſm, particularly of the Face and Mouth. *Caſtellus* from *Valeſcus de Taranta.*

TORUSCULA. A Drop. *Rulandus.*

TORYBETHRUM or THORYBETHRON. A Name in *Oribaſius, Collect. Medicinal. L.* 11. for the *Leontopetalon.*

TORYNE, τορύνη. A kind of Ladle, or *Spatula*, with which any thing, during Coction, is ſtir'd in a Pot.

TORYNETOS, τορυνητὸς, from the preceding Word. A kind of Panada made by boiling Bread, and agitating it, during the Coction, with a Spatula, Spoon, or ſome ſuch Inſtrument. *Cœlius Aurelianus, Chron. L.* 1. *C.* 1. calls it, in his barbarous manner, *ex Panis Pulticula confecta.*

TOSTIO. The ſame as TORREFACTIO.

TOTA BONA. See *Bonus Henricus.*

TOTANUS. The Name of a black and white aquatic Fowl, mention'd by *Jonſton*, whoſe Fat is ſaid to be anodyne and reſolvent

TOTOCIFERA ARBOR *Orellanenſium, Indigenis Ademanie Totocke.* De Laet.

This is a very tall and ramous Tree, with great Leaves ſhaped almoſt like Elm-leaves. It bears no Flower, but a kind of Buds, of the ſame Colour with the Leaves, that is, of a dark Green,

Green, which increaſes in Bigneſs by degrees, and protrudes at laſt a large Fruit, ſometimes as big as a Man's Head, almoſt round, but ſomewhat compreſſed on the fore Part, of a ligneous, hard and very thick Cortex, ſtriated and tuberous on the Outſide, and of a dark-brown and almoſt black Colour. It is divided by certain Spaces into ſix Regions, as we call them, in each of which are contained eight, ten, and ſometimes twelve Nuts cloſely joined together, and each of them cover'd with a ligneous, hard, and pretty thick Cortex of various Forms, but generally triangular, convex on one Part, with three Suckers, as it were, and very rough and wrinkled, yet not ſo much as the whole Cortex, three Inches long, and an Inch and half broad, and of a ruſſet, and ſometimes of a brown, or Aſh-colour. The Inſide is wholly taken up with an oblong Kernel, like an Almond, cover'd with a red Skin, and conſiſting of a very white and ſolid Fleſh, which is, alſo, ſomewhat oleous: but in Taſte it is more like a Filberd than an Almond; it may very well, however, ſupply the Place of Almonds, even in Confections, as *Europeans* have obſerv'd. The Natives aſcribe to them a Faculty of provoking Luſt.

The Trees which bear this Fruit are ſo high, and the Fruit itſelf ſo hard and ponderous, that the Natives of the Country dare not enter the Woods when the Fruit is ripe, without having their Heads defended by ſome ſtrong Buckler, or ſome other Covert, from the falling of the Fruit, which would break their Heads as effectually as a Stone. *Raii Hiſt. Plant.*

TOXICODENDRON, from τοξικὸν, (*Toxicon*) Poiſon, and Δένδρον, (*Dendron*) a Tree. *The Poiſon-tree.*

The Characters are;

The Leaves grow by Threes, as in the Trefoils. The Calyx is very ſmall, dentated, quinquefid, and monophyllous; the Flower roſaceous and pentapetalous. The Ovary in the Bottom of the Calyx becomes a roundiſh, dry, ſtriated Fruit, pregnant with a compreſſed, or flattiſh Seed.

Boerhaave mentions two Sorts of *Toxicodendron*; which are,

1. Toxicodendron; triphyllum; glabrum. *T.* 611. *Edera, trifolia, Canadenſis.* Corn. 96. *Vitis, ſylveſtris, trifolia.* Park. Theat. 1556. *Apocynum, trifolium, Indicum, vulgò Epimedium.* Stap. in Theoph. 364.

2. Toxicodendron; triphyllum; folio ſinuato, pubeſcente. *T.* 611. *Hederæ trifoliæ Canadenſi affinis Planta, peregrina, Arbor venenata quorumdam.* H. R. Par. 84. *Arbor, trifolia, venenata, Virginiana, folio hirſuto.* Raii Hiſt. 1799. *Boerh. Ind. alt. Plant.*

This Species differs from the *Vitis Virginiana* by its hairy Leaves, and their red Pedicles, Ribs, and Fibres. *Raii Hiſt. Plant.*

To theſe two Species *Miller*, in his *Gardeners Dictionary*, adds,

3. Toxicodendron; Carolinianum, Foliis pinnatis, Floribus minimis herbaceis. Carolina Poiſon-aſh, *vulgo.*

This Plant is poiſonous to ſuch a Degree, that it is ſaid to kill all kinds of Animals; whence no Inſect will feed on it, nor is ever found in it. *Hiſt. Plant. adſcript. Boerh.*

The Wood of theſe Trees, when burnt, emits a noxious Fume, which will ſuffocate Animals, when ſhut up in a Room where it is burnt. An Inſtance of this is mention'd in the *Philoſophical Tranſactions* by Dr. *William Sherard*, which was communicated to him in a Letter from *New England* by Mr. *Moore*, in which he mentions ſome People, who had cut ſome of this Wood for Fuel, which they were burning; and in a ſhort time they loſt the Uſe of their Limbs, and became ſtupid, ſo that if a Neighbour had not accidentally open'd the Door, and ſaw them in that Condition, it is believed they would have periſhed. *Miller's Dictionary.*

TOXICON, τοξικὸν, from τόξον. An Arrow, or Bow. That particular Species of Poiſon, with which the Antients us'd to infect their Arrows and Darts. But it is us'd to expreſs any ſort of Poiſon. *Toxicon* is, alſo, a Species of *Ladanum*, which is found in *Syria* and *Africa.*

TRACHEA ARTERIA. The Aspera Arteria. See Pulmones.

TRACHELAGRA. The Gout in the Neck.

TRACHELIUM. A Species of Campanula; which ſee.

TRACHELO-MASTOIDÆUS. The Name of a Muſcle, thus deſcrib'd by *Douglas.*

It ariſes from the tranſverſe Proceſs of the firſt and ſecond Vertebræ of the Back and from the three or four lowermoſt of the Neck, by ſo many thin Tendons, which, uniting, form a pretty thick fleſhy Belly, that runs up under the *Splenius*, and is inſerted into the middle of the Backſide of the *Proceſſus Maſtoideus* by a thin Tendon.

Its Uſe is to aſſiſt the *Complexus.*

N. B. This Muſcle often receives a roundiſh fleſhy Slip from the *Longiſſimus Dorſi.*

TRACHELOS, τράχηλος. The Neck.

TRACHEOTOMIA. Bronchotomy. See Angina.

TRACHOMA, τράχωμα, from τραχὺς, rough. An Aſperity, or Roughneſs of the Eye-lids, particularly the internal Parts.

The Eye-lids are ſubject to Scabs, which differ in proportion to the Largeneſs of the pruriginous Ulcers, that are formed about their Edges; and to the Malignity of the Humour, which produces them.

This Diſeaſe is known by the following Signs: A Weight and Heavineſs in the Eye; Swelling in the Eye-lids, with Pain and Itching; Heat and Redneſs at the Corners, and in the *Conjunctiva.* A viſcid Humour, mixed with pungent Tears, flows from the Ulcers; and, in proportion to its Viſcoſity, it glews the Eye-lids together in the Night-time. This Diſeaſe ſometimes affects the Whole, and ſometimes a Part, of the Eye-lid; and if it continues long, eſpecially in old People, the lower Eye-lid grows conſiderably thick, and turns downwards, ſo that the Cartilage reſembles raw Fleſh.

The Tetter of the Eye-lids very much reſembles thoſe Scabs, and its Signs are almoſt the ſame, the Appearance of raw Fleſh excepted; and if the Eyelids be turned out, they appear red in the Inſide, and ſeem to have Inequalities reſembling the ſmall Grains of Figs.

The original Cauſe of theſe Diſorders is a ſaline, corroſive Humour of the Blood, that is diſcharged on the Eye-lids, which ſuffer in proportion to its Malignity. The immediate Cauſe is often the Ulceration of the glandulous Veſſels, which furniſh the Film on the Edge of the Eye-lids; when theſe Veſſels are ulcerated, they emit conſtantly a viſcid ſlow Humour, which promotes their Ulceration.

Although this Diſeaſe is generally very obſtinate, yet it may be ſpeedily cured by Medicines which ſweeten the Blood, and leſſen the Violence of its Motion, provided the following Remedies be joined with them.

To cure the Ulceration of the Eye-lids, when it is cauſed by the Itch, I have found, that, by touching them with the *Lapis infernalis*, they cicatrize eaſily. The violent Heat of the Cauſtic muſt be abated, as ſoon as they have been touched, by waſhing the Eye in a ſmall Glaſs full of warm Water; and all poſſible Care muſt be taken, that the Part of the Eye-lid, which was touched with the Eſcharotic, may not bear againſt the Globe of the Eye, till the Pain be entirely ceaſed. They may be touched, in this manner, once or twice a Week, till they ſeem to require no more Uſe of the Cauſtic; then apply to the Parts, Morning and Evening, Tutty, reduced to a very fine Powder, which will cicatrize them.

But, before the Application of the *Lapis Infernalis*, I uſe the following Water.

Take of Liver of Antimony, two Drams; prepared Tutty, half an Ounce; Camphire, half a Dram; Cloves, twenty Grains: Infuſe them together for eight Days, in Eye-bright, Fennel, great Celandine and Rue-waters, of each four Ounces: Let ſome of this Water be dropped into the Eye, three times a Day.

Let the following Pomatum be uſed at the ſame time:

Take of Butter, melted, purified, and waſhed ſeveral times in Plantain and Roſe-waters, an Ounce; of prepared Tutty, a Dram: Mix them together. Every Night, going to Bed, let a little of this Ointment be rubbed between the Eye-lids, ſo that ſome of it may paſs on the Eye.

Ulcers of this Kind, which lie deep, are more difficult to cure than thoſe attended with fungous Fleſh.

The Tetters of the Eye-lids do not require ſuch powerful Medicines; for the Ulcerations, which they cauſe, in the Inſide of the Eye-lids, ſcarcely appear. The following ſimple Remedy may be ſucceſsfully uſed.

Take of Sugar of Lead, and crude Sal Ammoniac, each four Grains; diſſolve them in Plantain, and Roſe-water, of each four Ounces. Let the Eye-lids be waſhed with this three or four times a Day.

Theſe Remedies, together with Internals, proper to correct the peccant Quality of the Blood, and to diſſipate its ſharp Humours, will procure a ſpeedy Cure of theſe Diſorders. *St. Yves.*

TRACHOMATICON, τραχωματικὸν. The Name of a *Collyrium* deſcrib'd by *Galen, Meth. Medendi, L.* 14. *C.* 19.

TRACHSAT. A Metal exiſting in its Ore.

TRACHURUS, τραχῦρος. The Name of a Fiſh mentioned by *Aldrovandus.*

TRAGACANTHA.

The Characters are;

The Leaves grow by Pairs, as it were conjugated, to a Rib which ends in a ſtiff, ſharp Point. The Pod, which is bicapſular, and divided lengthwiſe, is full of Kidney-ſhaped Seeds.

Boerhaave mentions four Sorts of *Tragacantha*; which are,

1.

1. Tragacantha. *Offic. C. B. P.* 388. *Boerh. Ind. A.* 2. 53. *Tragacantha vera.* Park. Theat. 995. *Tragacantha Maſſilienſis.* J. B. 1. 407. Raii Hiſt. 1. 933. Tourn. Inſt. 417. *Tragacantha, ſive Spina Hirci.* Ger. 1147. Emac. 1328. *Aſtragalus aculeatus fruticoſus Maſſilienſis Tragacantha dictus,* Pluk. Almag. 60. GOAT'S-THORN.

The true Goats-thorn has a long, thick, crooked, woody Root, taking faſt Hold in the Ground by its many Fibres, from which ſpring diverſe Branches, growing very thick together, having ſeveral ſmall, round, whitiſh, hoary Pinnæ, ſet oppoſite upon long Foot-ſtalks, ending in a Spine; which, when the Leaves drop, as they do every Year, become harder and ſtiffer; new Leaves ſpringing out, the old Stalks degenerating into Thorns: The Flowers grow towards the Tops of the Branches, ſingly, being white; in Shape like Broom-flowers, but much leſs; and after them in their native Country, come ſhort, flat Pods, with two or three ſmall round Seeds. It grows in the Southern Parts of *France* and *Italy*, but it yields the Gum, only, in the more Eaſtern Countries.

The Gum Tragacantha, or Gum Dragon of the Shops, burſts forth from the Root of this Plant; it is brought to us from *Turkey*, in Pieces of different Magnitudes, twiſted and curled up like Worms, ſometimes white and ſometimes yelloviſh, but the whitiſh and cleareſt is beſt: It has little Smell or Taſte, it ſwells very much in Water, a little of it making a great deal of Mucilage.

Gum Dragon is of a glutinous Nature, good to correct the Acrimony and Sharpneſs of the Humours, and therefore pectoral and good for Coughs, Hoarſneſs, and catarrhous Defluxions; it likewiſe takes off the Heat and Sharpneſs of the Urine, and helps Dyſenteries, ariſing from the Excoriation of the Bowels, by ſharp corroſive Humours. Outwardly, it is good in Collyriums, for hot inflamed Eyes. *Miller's Bot. Off.*

Gum Tragacanth has an emplaſtic Virtue of ſtopping the Pores, and of obtunding Acrimony. Its Uſe is in Ophthalmic Medicines, as alſo in Coughs, Aſperities of the Windpipe, Defects of the Voice, and in Catarrhs, being made into an Eclegma with Honey, or ſuffered to melt under the Tongue. A Dram of it macerated in *Paſſum*, is taken for Pains in the Kidneys, and Corroſions of the Bladder, being mixed with burnt and waſhed Hartſhorn, and a little feathered Alum. *Dioſcorides, Lib.* 3. *Cap.* 23.

Externally, ſays *Schroder*, it is of Efficacy in Clyſters for the Dyſentery; and diſſolved in Milk, or Roſe-water, is good for the Redneſs, and acrimonious Rheums affecting the Eyes, and for Aſperities of the Eye-lids. Being diſſolved in warm Water, it makes a Mucilage, very convenient for the Formation of Troches, and other Forms of Medicines.

It is moiſtening, lenient, emplaſtic, corrects Acrimony, and incraſſates: Hence it is of Efficacy in Hoarſneſſes, Spitting of Blood, Aſperities of the Fauces, and the Strangury. *Dale.*

It is called *Tragacantha*, from τράγος, (*Tragus*) a Goat, and ἄκανθα, (*Acantha*) a Thorn, that is to ſay Goat's Thorn, becauſe its Pod reſembles a Goat's Beard.

Gum Tragacanth is a moſt gentle and excellent Medicine, in all Diſeaſes attended with a Bleeding of the Capillary Veſſels, on Account of their Debility, or the Acrimony of the Humours. Four, or Six Grains, taken in Milk, or Water, are effectual againſt Piſſing of Blood, and two Grains, diluted with Roſe-water, are commended in Inflammations and Aſperities of the Eyes. It is a Demulcent, and incraſſates thin and acrid Lymph, and is therefore good in Hoarſneſſes and Coughs, proceeding from thin Rheums; in the Strangury, and Acrimony, and Heat of Urine; a Decoction of the Leaves is a Strengthener. *Hiſt. Plant. aſcript. Boerhaave.*

2. Tragacantha; foliis incanis; minoribus; minuſque villoſis.

3. Tragacantha, humilis; Balearica; foliis parvis; vix incanis; flore albo. *Salvador.*

4. Tragacantha; foliis minimis; viridibus. *Boerh. Ind. alt. Plant. Vol* 2.

Beſides the foregoing Sorts of *Tragacantha*, *Dale* mentions the following,

POTERIUM. Offic *Spina Hirci minor.* Ger. 1147. Emac. 1328. *Tragacantha altera, ſeu minor, Poterion forte, Dioſcoridis.* Park. Theat. 996. *Tragacantha altera Poterium forte Cluſio.* J. B. 1. 408. Tourn. Inſt. 417. Raii Hiſt. 1. 933. *Tragacanthæ affinis lanuginoſa ſive Poterium.* C. B. P. 388. SMALL GOAT'S THORN.

It grows in the Kingdom of *Granada* in *Spain*, and flowers in Summer. The Root, which is the Part uſed in Medicine, being bruiſed and applied, conglutinates Wounds and Cuts where the Nerves are divided; the Decoction, alſo, being drank, is effectual in nervous Affections. *Dioſcorides, Lib.* 3. *Cap.* 17.

TRAGANOS. A Name for the *Ephedra, maritima, major.*

TRAGASIUS, τραγάσιος. An Epithet for a Sort of Salt, procured from a certain ſtagnant Water, very little different from Sea-ſalt. *Galen de Simp. Facult. L.* 15.

TRAGEA, A Sort of Powder, made up with Sugar, in order to be apply'd externally, as to the Region of the Stomach; or to be infuſed in Wine; or made into an Electuary. *Schroder* gives ſeveral Powders under this Name, *L.* 2. *C.* 77.

TRAGELAPHAS. An Animal reſembling a Goat and a Stag, mentioned by *Aldrovandus.*

TRAGEMA. The ſame as TRAGEA.

TRAGI, TRASI, or TRASSI, Names for the *Cyperus*; *rotundus*; *eſculentus*; *anguſtifolius.*

TRAGIA.

The Characters are;

It hath a funnel-ſhaped Flower, conſiſting of one Leaf, for the moſt Part divided into three Segments, but theſe are barren; for the Embrios are placed at a Diſtance, on the ſame Plant, which afterwards become tricoccous Fruits, compoſed of three Cells, each containing one ſpherical Seed.

Miller mentions two Species.

1. *Tragia alia ſcandens, urticæ Folio. Plum. Nov. Gen.*

2. *Tragia ſcandens, longo Betonicæ Folio. Plum. Nov. Gen.*

Theſe Plants were diſcovered by Father *Plumier* in *America*, who conſtituted this *Genus* by this Name, in Honour to *Hieronymus Bock*, a famous Botaniſt, who was commonly called *Tragus.*

The firſt Sort grows plentifully in the *Savannahs* in *Jamaica*, and the other warm Parts of *America*; where it twines round whatever Plants or Trees it grows near, and riſes ſeven or eight Feet high, having tough woody Stems. The Leaves are like thoſe of the common Nettle; and the whole Plant is covered with burning Spines, like thoſe of the Nettle, which renders it very unpleaſant to handle.

The ſecond Sort was found by the late Dr. *Houſtoun*, at *Campeachy*, from whence he ſent the Seeds. *Miller's Dictionary.*

TRAGIUM.

Dioſcorides mentions two Species of *Tragium*, but has written ſo obſcurely of them as to leave much room for Controverſy, concerning the firſt of them, among Botaniſts, who call ſeveral Plants by that Name. *Geſner*, makes it the *Polygonum baciferum*; *Dodonæus*, in his *Hiſtoria Gallica*, will have it to be the *Atriplex olida*, which he calls *Tragium Germanicum*; *Pena* and *Bellus* take it for the *Andrioſæmum fœtidam*, which *Bellonius* calls *Tragium Creticum. Lobel* affirms the *Tragium* of *Dioſcorides* to be our *Fraxinella*, to which Opinion I am moſt inclined, becauſe none of the foreſaid Plants, beſides this, can be ſaid to be like the Lentisk in Seed, Leaf, and Branches, only of a leſſer Size.

The other Tragium *Rauwolfius* makes a Species of *Stœchas*; which ſee under *Tragium alterum.*

TRAGIUM ALTERUM, Offic. *Tragium alterum Dioſcoridis quibuſdam, Foliis Trichomanis*, J. B. 3. 279. *Stœchadi ferratæ Affinis*, C. B. P. 216. Raii Hiſt. 1. 514, *Secundus, vel Sucudus Avicennæ*, Rauwolf. BASTARD DITTANY.

Dioſcorides deſcribes it as having the Leaves of the *Scolopendrium*, and the fine white Root of the wild Radiſh. The Leaves in Autumn have the ſtrong, rank, Smell of the Goat, whence the Plant takes the Name of *Tragium.* It grows on Mountains and Precipices, and was found by *Rauwolfius* about *Aleppo*, eſpecially in moiſt Places.

The Herb and Root are uſed; the Herb, whether crude or boiled, is ſaid, by *Dioſcorides*, to be good for the Dyſentery.

TRAGOCEROS. *Bruniſelſius* informs us, that this is the *Anemone*; and, alſo, that the *Tragium Alterum*, and the *Aloe* are both thus called by *Dioſcorides.* But he either miſtakes, or miſquotes his Author, for I find no ſuch Paſſages.

TRAGOPOGON.

The Characters are;

It has all the Characters of the *Scorzonera*, only the Calyx is oblong, not ſquamous, and its Segments are extended without the Flowers, ſurrounding them in the Form of a Star; the Floſcules, alſo, are eaſily convolved, and unfold themſelves againſt the Sun.

Boerhaave mentions nine Species of *Tragopogon*, which are;

1. Tragopogon; alter; grammeo Folio; ſuaveolens. *Col.* 1. 232. *Deſcr.* 231. *Ic.*

2. Tragopogon; flore obſolete purpureo. *Flor.* 2. 29. *An. Tragopogon, Porri Folio, dilute ianthino Flore.* H. R. P?

3. Tragopogon; pratenſe; luteum; minus. *M. H. R. Bleſ.*

4. Tragopogon; pratenſe; luteum; majus. *C. B. P.* 274. *Tourn. Inſt.* 477. *Boerh. Ind. A.* 90. *Tragopogon.* Offic. Park. Parad. 514. *Tragopogon luteum.* Ger. 595. Emac. 735. Raii Hiſt. 1. 252. Synop. 76. *Tragopogon Flore luteum.* J. B. 2. 1058. YELLOW GOAT'S BEARD.

It grows in Meadows and Paſtures, and flowers in *June* and *July.* The Roots are very nutritive, and for that Reaſon good for lean and conſumptive Perſons. They are ſaid, alſo, to cure Diſorders of the Breaſt, the Cough, and Difficulty of Reſpiration, and the Pleuriſy; for which Effects, ſince the Roots are ſweet, *C. Hoffman* knows not how to account. They are, alſo, ſuppoſed to be good for the Strangury, and to expel the Stone, whence the Herb is called by the *Italians Saſſifica*, as much as to ſay *Saxifraga.* It is, alſo, uſefully apply'd to Wounds. The expreſſed Juice of the Root, and its diſtilled Water work the ſame Effects. *Raii H. P.*

This Herb grows in Meadows and moiſt Places. Its Root is ſoft and ſweet like Milk, affords good Nouriſhment, removes Coſtiveneſs, purifies the Blood, ſweetens the acrid Humours, increaſes the Milk, provokes Urine, expels Gravel, and is good againſt Oppreſſions of the Breaſt and Lungs, the Cough, a Conſumption, and pricking Pains of the Sides. Some in Conſumptions, ariſing, from Ulcers in the Lungs, recommend the Roots of this Herb and a Syrup prepared of its Juice. The expreſſed Juice cures re-

cent

cent Wounds. Its Water is ſaid to be poſſeſſed of ſurpriſing Qualities for the Cure of a Spitting of Blood. *Zorn. Botanologia.*

It is ſaid to be good for Eſtuations and lancinating Pains of the Stomach and Thorax. *Dale.*

5. Tragopogon; luteum; Foliis gramineis; caule purpuraſcente; *Raii.*

6. Tragopogon; purpuro-cœruleum; crocifolium. *C. B. P.* 275. *M. H.* 3. 80. 8.

7. Tragopogon; Coronopi Folio. *C. B. P.* 274.

8. Tragopogon; purpuro-cœruleum; Porri Folio; quod Artiſi vulgo. *C. B. P.* 274. *Barbula Hirci, purpura cærulea.* Tab. Ic. 599. *Gerontopogon, ſive Saſſifica Italorum.* Lugd. 1079.

9. Tragopogon; caule circa caput tumido. *Vaill. Boerh. Ind. alt. Plant. Vol.* 1.

The Name is from τράγος, (*Tragos*) a Goat, and πώγων (*Pogon*) a Beard; becauſe its downy Seed, while incloſed in the Calyx, reſembles the Beard of a Goat.

The Virtues are the ſame as thoſe of the *Scorzonera*, only a little weaker; it affords very good Nutriment, and is therefore adapted to culinary Uſes. It is accounted, alſo, a Specific againſt the Pleuriſy, and the Stone in the Kidneys and Bladder; it opens and mollifies the Paſſages, and acts upon them by its demulcent Quality; it is, alſo, a very good Digeſter of Phlegm, and for that Reaſon of excellent Service in an Aſthma and Dyſpnœa. *Hiſt. Plant. adſcript Boerhaav.*

Tragopogon Hiſpanicus. A Name for the *Scorzonera*; *latifolia*; *ſinuata.*

Tragopogon, Laciniatum. A Name for the *Scorzonera*; *laciniatis Foliis.*

TRAGOPYRUM. The ſame as FAGOPYRUM.

TRAGORCHIS; ſee ORCHIS.

TRAGORIGANUM. Offic. *Tragoriganum Creticum.* C.B.P. 223. Park. Theat. 16. Raii Hiſt. 1. 523. *Tragoriganum Cretenſe.* Cer. Emac. 668 *Tragoriganum quibuſdam nigrius, Folio duro, Flore purpureo.* J. B. 3. 261. GOAT'S MARJORAM.

It grows in the Iſland of *Crete* or *Candy*, and flowers in *March.*

Tragoriganum is of an hot and acrimonious Quality, and uſeful for the ſame Purpoſes as Thyme, Savory, Hyſſop, and the like; that is, for pulmonic Affections, as the Cough and other Diſorders of the Lungs; to provoke Urine, and the Menſes; for Crudities of the Stomach, acid Eructations, and the like Affections of that Part.

TRAGORIGANUM ALTERUM. Offic. *Tragoriganum Cluſii.* Cer. 513. Emac. 668 *Tragoriganum Hiſpanicum.* Park. Theat. 16. *Tragoriganum anguſtifolium.* C. B. P. 223. Raii Hiſt. 1. 523. *Tragoriganum tenuioribus Foliis, Flore candido.* J. B. 3. 261. SPANISH GOAT'S MARJORAM.

It grows in the Kingdom of *Valentia* in *Spain*, and flowers in *May*, and the Herb, which is the Part uſed in Medicine, agrees in Virtues with common Goat's Marjoram.

TRAGORIGANUM, is, alſo, a Name for ſeveral Sorts of *Satureia*; which ſee.

TRAGOSELINUM.

The Characters are;

The Root is like that of a Cabbage, and acrimonious in many Plants, the Leaves are pinnated like thoſe of the *Pimpinella ſanguiſorba*; the Petals of the Flower are bifid and unequal in many; and the Seeds are oblong, gibbous, and ſtriated.

Boerhaave mentions nine Sorts of *Tragoſelinum*; which are,

1. Tragoſelinum; majus; umbella candida. *Tourn. Inſt.* 309. *Boerh. Ind. A.* 54. *Pimpinella Saxifraga.* Offic. Ger. 887. Emac. 1044. Raii Hiſt. 1. 445. Synop. 3. 213. *Pimpinella Saxifraga major umbella candida.* C. B. P. 109. *Saxifraga Hircina major.* Park. Theat 947. J. B. 3. 109. BURNET SAXIFRAGE.

The Root, of the great Burnet Saxifrage, is thick at the Head, ſpreading into ſeveral Branches; which grow deep in the Earth, of a whitiſh Colour, and an hot biting Taſte, from which ſpring ſeveral pinnated Leaves, having three or four Pair of Pinnæ, ſet oppoſite, with an odd one at the End; they are ſomewhat hard in handling, and are larger, narrower, and more deeply cut in, than thoſe of the common Burnet; the Stalks are about a Yard high, ſtiff-jointed, and full of Branches cloathed with narrower Leaves; and at their Ends grow Umbels of ſmall white Flowers, followed by very ſmall, dark, brown, ſtriated Seed; it grows in divers Parts of *England*, particularly, in many Places of *Kent*; but is not very common about Town; and therefore our Herb-women ſell the Roots of the ſmaller Kind, or the *Pimpinella Saxifraga minor Foliis Sanguiſorbæ*, Ray's Synop. which grows frequently in gravelly Places, and is a much ſmaller Plant, with leſſer and rounder Leaves, next the Stalks; and, in the Compoſition of the *Syrupus Alliariæ*, they generally give either the common Burnet, or that and the Meadow Saxifrage, inſtead of this.

The Roots of Burnet Saxifrage are hot and dry, carminative, expelling Wind, and are good for the Colic, and Weakneſs of the Stomach; they are, likewiſe, diuretic, and uſually given againſt the Stone and Gravel, as, alſo, for the Scurvy, and are an Ingredient in the *Pulvis Ari compoſitus. Miller's Bot. Off.*

2. Tragoſelinum; majus; umbella rubente. *T.* 309. *Pimpinella Saxifraga, major, umbella rubente.* C. B. P. 159.

3. Tragoſelinum; alterum; majus. *Tourn. Inſt.* 309. *Boerh. Ind. A.* 54. *Pimpinella, Saxifraga minor.* Offic. *Pimpinella Saxifraga minor, Foliis Sanguiſorbæ.* Raii Hiſt. 1. 445. Synop. 3 213. *Pimpinella Saxifraga major, altera.* C. B. P. 159. *Pimpinella Saxifraga major noſtras.* Park. Theat. 946. *Saxifragia hircina minor Foliis Sanguiſorbæ.* J. B. 3. 111. SMALLER BURNET SAXIFRAGE.

It grows in dry Paſtures and flowers in *June*: The Herb is uſed, which agrees in Virtues with the *Tragoſelinum*; *majus*; *umbella candida*, to which it may be a *Succedaneum.*

4. Tragoſelinum; minus. *T.* 309. *Pimpinella, Saxifraga, minor.* C. B. P. 160. *Saxifragia, hircina, minima, Pimpinella criſpa Tragi,* J. B. 3. 2. 113. *Saxifraga parva.* Dod. p. 315.

It is very well adapted, as *Tragus* ſays, for breaking and expelling the Stone, being of an hotter Temperament than all the Species of *Apium.* The dried Root may be uſed with Food, inſtead of Pepper; for in Taſte and Strength it ſo well anſwers to Pepper, that it might, fitly enough, be called *German Pepper*: And, in my Opinion, it is more uſeful and ſalutary than Pepper, as I have learnt by long Experience. The Herb, Root, and Seeds, have the Virtues of the *Petroſelinum*; but are much more efficacious in mitigating and removing Pains. Of the Roots may be prepared Troches, of great Service in a cold Diſtemperature of the Stomach, or when that Part is affected with groſs and viſcous Humours. The Root, in what Manner ſoever taken, whether in Powder, Potion, or Eclegma, is a ſingular Remedy againſt all Kinds of Poiſon; mitigates Pains of the Inteſtines; is good for the Stone in the Kidneys; provokes the Menſes, and whatever elſe requires to be evacuated with the Urine. The ſame Effects are to be expected from the Seed, and the diſtilled Water, which latter, alſo, deterges Spots of the Face, and renders it hard. That it is a Vulnerary, is not ſo certain, becauſe of its Heat and Acrimony; but perhaps it may be of Service in deſtroying ſordid Ulcers. The Root, according to *Fuchſius*, is of extraordinary Uſe in preventing and curing the Peſtilence, and other contagious Diſeaſes. Taken in Vinegar, it is highly commended in peſtilential Diſtempers. Some extol an Electuary of the Root bruiſed very ſmall, and made up with Sugar of Roſes, againſt a Phthiſis: But, ſays *J. Bauhine*, I can ſcarce perſuade myſelf, that ſo hot and acrimonious a Root can be proper in a Phthiſis. Others preſcribe it for the Colic, I know not how ſucceſsfully. Externally, it is of Uſe as a Maſticatory, in the Tooth-ach, by extracting Phlegm; and to ripen Buboes, and cancerous Tumors; to increaſe Milk, and for ſome other Purpoſes.

5. Tragoſelinum; majus; degener; umbella alba. *Pimpinella, Saxifragia, major, degener, ſeu Folius longius diſſectis.* M.H. 3. 284.

6. Tragoſelinum; quæ Pimpinella; Saxifraga; minor; criſpa; *M. U. Ic. T.* 5.

7. Tragoſelinum; parvum; Folio Apii; umbella alba.

8. Tragoſelinum; Folio Apii; mininum.

9. Tragoſelinum; perenne; Folio Apii majus. *Boerh. Ind. alt. Plant. Vol.* 1.

It has its Name from τράγος (*Tragos*) a Goat, and σέλινον (*Selinon*) *Apium, Petroſelinum*, becauſe the Leaves reſemble thoſe of the *Petroſelinum*, and the Goats delight to feed upon them; and it is called *Saxifrage*, becauſe it grows out of the Rocks, as if it broke through them. Many think this Name given it becauſe it breaks the Stone, but they are miſtaken, for Plants which grow on rocky Mountains, or ſpread their Roots among Rocks, are of an acrid and aromatic Quality.

It is ſcarce thought of any Uſe in Medicine: The firſt, ſecond, and third Species are called Pepper, becauſe they are ſo hot as not to be ſuffered in the Mouth, whence they are proper where heating Things are required, as in an aqueous Dropſy; the ſecond acts very powerfully, and may be of great Force in expelling the Stone, but I do not ſay that it is always proper to be given. The Plant, in ſhort, is an Aperient, Emmenagogue, Diuretic, and Diaphoretic. The fourth Species is called Pepper, for it exceeds Pepper in Acrimony. *Hiſt. Plant. aſcript. Boerhaave.*

TRAGUS, τράγος, (*Hircus* a Goat,) is a *Greek* Word, ſignifying that Affection of Youth, about fourteen Years of Age, when the Voice alters to a graver Sound, Hair begins to appear on the Beard and Pubes, and Venereal Inclinations ariſe, with an Intumeſcence of the Teſtes, as in the *Tragos*, or Goat, whence the Name is derived, and in which, during their Time of Rutting, that Intumeſcence is very remarkable. *Hippocrates* ſeems by the Word τράγος to mean rather this Intumeſcence of the Teſtes, than the Alteration of Voice, in thoſe who have their firſt Venereal Deſires and Titillations, in that Expreſſion, *6 Epid. Sect.* 4: *Aph.* 25 τράγος ὁκότερος ἂν φανῇ ἔξω, ὄρχις δεξιὸς, ἄρσην, εἰ δὲ εὐώνυμος, θῆλυ, "which *Tragos* (*Teſtis*) appear jutting out, if it be "the Right Teſticle it is a Male, if the Left Female;" for he ſeems here to adviſe us to obſerve which of the Teſtes ſwells and is prominent, and this Affection he calls τράγος. To the ſame Purpoſe, with an Eye to this Paſſage, ſpeaks *Galen*, when he ſays, κατὰ δὲ καὶ τῶν ὀρχέων, &c. "For the ſame Reaſon, when the "right Teſtis is better turn'd, and foremoſt in the *Tragus*, or "Intumeſcence [πρῶτος μὲν ἐν τῷ τράγῳ διαφυσηθεὶς] it makes "Begetters of Males; when ſlenderer, and laſt in Intumeſcence, "it diſpoſes for the Generation of Females. Here the Verb "τραγᾷν ſeems to be ſpoken of that Intumeſcence of the Teſtes

" in Animals, at their firſt Impulſes to Coition." The ſame Author, *Lib.* 14. *de Uſu Partium*, has the following Expreſſion, " ὁ δὲ ὀρχις ὁ δεξιὸς ὅταν ἀσθενέστερος ἀπεργασθῇ θαλάμῳ, &c. But " when the Right Teſtis is of the weaker Conſtruction, the Left " is firſt diſtinguiſhed by what they call the *Tragus*; and by " this we may conjecture, that the Animal will be a Procreator " of Females; as, on the contrary, if the Left Teſtis remained " as Nature required, and the Right were firſt elevated, ac- " cording to the *Tragus*, that Animal, as far as lay in this Part, " would beget Males." But *Galen*, in his Comment on the fore-quoted Place, 6 *Epid.* ſeems in the Phraſe ἐν τῷ τραγᾶν, to join both Affections, the Change of the Voice, as well as the Intumeſcence of the Teſtes, for theſe are his Words; ὅτως ἂν κἀκεῖνα πρὸς Ἱπποκράτους ἐλέγετο, τράγος ὁπότερον ἂν φανῇ ἔξω, &c. " To " the ſame Purpoſe are theſe Words of *Hippocrates*. You are to " obſerve which Teſtis is prominent, if it be the Right, a Male, if " the Left a Female (is portended). For when the Members of " Generation are firſt elevated, and the Voice is ſomehow al- " tered to a rougher and graver Tone, which is what we mean " by the *Tragus*, (τοῦτο γὰρ τὸ τραγιᾶν ἐστι). *Hippocrates* directs " us to obſerve which of the Parts is more robuſt, for thoſe Parts " which firſt ſwell, and grow big, from a Supply of Mat- " ter, are certainly the ſtrongeſt." And, hence it is, I ſuppoſe that *Alexand. Aphrodiſ.* in his *Natural Queſtions*, expreſſes this Change of the Voice, not ſimply by the Verbs τραγᾶν, or τραγίζειν, but by βράγχει τραγᾶν, to ſignify the Roughneſs of the Voice, made by this Alteration.

The Verb, τραγίζειν, as derived from τράγος, is uſed by *Hippocrates* 6 *Epid. Sect.* 3. *Aph.* 18. to ſignify that State of Youth which firſt begins the Uſe of Venereal Exerciſes, when the Voice becomes rougher and more unequal, and in a manner hoarſiſh, and Hæmorrhages happen from the Noſe, on account of the Increaſe of Heat in the Blood. Theſe are Symptoms incident to thoſe, who, as *Hippocrates* expreſſes it, 3 *Aph.* 27. περὶ τὴν ἥβην πεπαγασι, " arrive at Puberty;" which as *Alex. Aphrod. Lib.* 1. *Qu.* 123. explains it, is about the fourteenth Year.

Some will have τράγος, and τραγίζειν, to be ſpoken by *Hippocrates*, of young Men, who have experienced the Uſe of Venery, and have lecherous Deſires, in that reſpect reſembling Goats, as well as in a kind of Rankneſs of Smell, in which, as the *Latin* Phraſe is, *Hircum olent*, they ſmell of the Goat. Young Men of this Caſt, were called by the Antients *Hirceſi*, and *Hirquitalli*, and were ſaid *Hirquitalire*, which expreſſes the Greek τραγίζειν. *Hirquitalli*, in *Feſtus*, are Boys approaching to the State of Manhood, and ſo called, he ſays, from their Goat-like Luſt. And hence τράγος ſeems to ſignify, alſo, that rank and goatiſh Smell under the Alæ, or Armpits, of which *Horace* ſays,

——*Gravis hirſutis cubat Hircus in Alis.*

Τράγος is, alſo, a kind of Food prepared of *Zea*; according to *Galen*, *Com.* 1. *in Lib. de Rat. Vict. in Morb. acut.* or of *Oſyaa*. *Lib. de Alim. Fac.* which *Pliny*, *Lib.* 18. *Cap.* 10. calls *Tragum*. Τράγος, alſo, is reckoned among oleraceous, as well as frumentaceous Foods.

Τράγος, ſignifies, alſo, a Diſeaſe in Vines, when they bear no Fruit, but abound in Leaves, as appears from *Ariſtotle*, *Lib.* 5. *Cap.* 18. *de Gen. Animal.* and *Theophraſtus*, *de Cauſ. Plant. Lib.* 5, *Cap.* 10, 13.

TRAGUS. A Name for the *Ephedra*; *maritima*; *major*; and for the *Ephedra*; *maritima*; *minor*.

TRAGUS, in Anatomy, is a Part of the external Ear. See AURIS.

TRAGUSSPINOSUS. A Name for the *Kali*; *ſpinoſum*; *Folus longioribus & anguſtioribus*.

TRAMIS, τρᾶμις, is expounded by ὄρρος (*Orrhus*) called ἱπποπουρις, (*Hippopruris*), that is, the Line which interſects the Middle of the Scrotum, and paſſes through the *Taurus* to the Anus. But *Ruffus Epheſius*, reckoning the Parts of the Pudenda virilia, calls the propending Part, as he expreſſes it, καῦλος and σῶμα, the non-propending, or fixed Part, ὑπόσημα, and κύστεως πρόχυλος: the Neck of the Bladder, and the Line which interſects them τρᾶμις, which, others, he ſays, call ὄρρος. *Heſychius* makes τρᾶμις the Fiſſure of the Anus; ſo τρᾶμα, or τράμις, in *Ariſtophanes*, ſignifies τὸ τρῆμα τῆς ἕδρας, " the Perforation of the Anus", that is, the Podex, or σφιγκτὴρ " the Sphincter," according to *Lyſimachus*, as we read in *Erotian*. *Pollux* ſays, that the Line, like a Suture, under the Penis, which paſſes through the Middle of the *Scrotum*, and under the Part called *Taurus*, ταῦρος, is called περίναιον (*Perinæum*), τρᾶμις, (*Tramis*), and ὄρρος, (*Orrhus*).

TRANSFUSIO.

Tranſfuſion and Infuſion may be reckoned chirurgical Operations, becauſe, as in Bleeding, the Aperture of a Vein is required. By Infuſion, is meant the Injection of Medicines into the Blood; and by Tranſfuſion, the Conveyance of the Blood of one Perſon, or Animal, into the Veins of another. Although theſe Operations are ſeldom now performed, yet they were much practiſed from the Year 1660 to about 1680, and the following were the Reaſons that occaſioned the Invention of them.

The Generality of Phyſicians agree, that almoſt all Diſeaſes proceed from a Diſorder of the Blood, which, may, therefore, be ſooner, and more eaſily, corrected by the Injection of Medicines into the Blood, or by the Tranſfuſion of the Blood from a ſound Perſon, or Animal, into the Veins of the Patient. For Medicines taken by the Mouth, are not only changed in the Stomach, and Inteſtines, but are likewiſe weakened before they arrive at the Blood. There are, alſo, ſome Caſes, in which Medicines cannot be taken by the Mouth, as in Apoplexies and the Quinſey, which may be expeditiouſly remedied by the Infuſory Method. Phyſicians, therefore, imagined that the moſt inveterate Diſeaſes muſt yield to this Method, ſuch as proceed from the Leproſy, Gout, Epilepſy, Apoplexy, Conſumption, the Pox, Scurvy, malignant and obſtinate Fevers, and large Hæmorrhages, and that it would even reſtore Youth to Old-age, and recover the worſt Conſtitutions. But how much ſoever a Remedy, endowed with ſuch Virtues, might be deſired, yet the Event of theſe Operations, was ſo far from anſwering Expectation, that it often produced the worſt Conſequences. For almoſt all the Patients, on whom the Experiment was tried, were affected, either, with Stupidity, Fooliſhneſs, a Delirium, or Melancholy, or were ſuddenly deprived of Life. Such fatal Conſequences ſoon brought theſe Operations into Diſrepute, and they are ſaid to have been condemned and prohibited by an Edict of the Parliament of *Paris*.

The Infuſory Method is thus performed. A Vein muſt be opened, generally in the Arm, as in Bleeding: Here the Remedy muſt be injected, with a Syringe, or with a Clyſter-pipe and Bag, as in *Tab.* XXXII. *Fig.* 10. which muſt be turned upwards, that the Medicine may the ſooner arrive at the Heart, and then the ſame Manner of Dreſſing may be uſed as in Phlebotomy. But whether this Operation ſhould be entirely condemned, or whether it may be uſeful to inject proper Remedies in an Apoplexy, or Quinſey, when the Caſe is deſperate, as warm Milk, or Broths, or to tranſfuſe the Blood of a ſound Perſon, or Animal, into the Veins of the Patient, after diſcharging the morbid Blood, remains, in my Opinion, to be determined by future Experience. *Purmann* in his Surgery, *Part* 3. *Chap.* 31. teſtifies, that he not only cured others in this Manner, but, alſo, himſelf of a violent Itch, and an obſtinate Fever.

The Tranſfuſion of Blood may be done in this manner. A Vein of the Patient's Arm muſt be opened, as in *Tab.* XXXII. *Fig.* 11. or his Hand, as in *Fig.* 12. into which introduce a Pipe of Silver, Braſs, or Ivory, keeping the End in the Vein turned upwards: The ſame ſhould be performed in the ſound Perſon, but ſo, that that End of the Pipe, which is introduced into the Vein, ſhould be turned downwards, or towards the lower Part of the Vein, then let the ſmaller of the two Pipes, be inſerted into the larger, and as much Blood, as may be thought neceſſary, will flow from the ſound Perſon, into the Vein of the Patient, and then the Wound may be dreſſed. If thus the Patient is not recovered, the Operation, after ſome time may be repeated. But before the Blood be tranſfuſed, ſome of the morbid Blood ſhould be drawn from the Patient, that the new Blood may circulate more freely. Sometimes a Vein is opened in each of the Patient's Arms at the ſame time, ſo that the ſame Quantity of the vitiated Blood, is diſcharged at one Orifice, that he receives of the ſound by the other. *Lamſweerde*, in his Notes on *Schultetus*, may be conſulted about this Operation, and *Junken*, in his *Chirurgia Germanica*, *p.* 487. If it be neceſſary to convey the Blood of an Animal into the Patient, as that of a Calf, or a Sheep, a Vein or Artery muſt be opened in their Neck, Leg, or Thigh, and the Operation proceeded in nearly as before. See *Tab.* XXXII. *Fig.* 13. and *Lamſweerde in Append. ad Scult. et Armamen. Chir.* & *Purmanni Chirurg. P.* 3. *Cap.* 31. When Pipes of Metal and Ivory were found too ſtiff, and on that account painful, others were invented of a ſofter and flexible Kind, to be placed between the two ſolid ones, made of the carotid Artery, or Ureter of an Ox, Calf, or Sheep, or of the Aſpera Arteria of a Fowl; by which means both the Pain and Trouble in Tranſfuſion of the Blood were leſſened.

Dr. *Lower*, in his Treatiſe *de Corde*, aſſerts himſelf to be the Inventor of the Tranſfuſion of the Blood, in Oppoſition to *Denys*, who in a certain Epiſtle claims this Honour to himſelf. Many Experiments of this kind did *Denys* make at *Paris*, but they were attended with very ill Succeſs. *Sturmius* a celebrated Mathematician of *Altorf*, and *Tebrius* a Profeſſor of *Franckfort*, aſcribe this Invention to *Maurice Hoffman*, a Phyſician at *Altorf*. *Muys*, however, contends, that *Libavius* deſcribed it at large in 1615, but without informing us in what Book. The Invention of the Infuſory Method has been generally attributed to *Wren* a celebrated *Engliſhman*. But I think this Method was deſcribed before him by *Major*, a Profeſſor of Phyſic at *Kiel*, in a Treatiſe publiſhed in 1664, this Operation being never before heard of in *Germany*. Thoſe who deſire more on this Subject may conſult *Majorii Lib. de Chirurgia infuſoria*; *Ettmulleri Diſputat. de eod. Elsholzii Clyſmat. nov.* & *Purmanni Chirurgia*. The moſt remarkable Writers on the Tranſfuſion of the Blood are, *Lower de Corde*, *Santinellus in Confuſione Tranſfuſionis*, *Manfredus de Sanguinis Tranſfuſione*, *Sturmius in Philoſophia eclect. Diſſ.* X. *Mercklinus de Ortu & Occaſu Tranſfuſionis Sanguinis*; and *Lamſweerde in Appendice ad Sculletum*, *pag.* 29. Caſes of the Infuſory Method, in deſperate Diſeaſes, may be ſeen in *Miſc. Nat. Cur. Ann.* IX. & X. *Heiſt. Chirurg.*

TRANSLATIO. The ſame as METASTASIS; which ſee.

TRANSPIRATIO.

TRANSPIRATIO. Tranſpiration, or Perſpiration. See Cutis, and Perspiratio.

TRANSPLANTATIO. Tranſplantation. *Paracelſus*, in many Parts of his Works, mentions, and recommends a Method of curing Diſeaſes, by tranſplanting them into Vegetable or Animal Subſtances. A Subject too whimſical to deſerve farther Notice.

TRANSVERSALES MUSCULI. The tranſverſe Muſcles; a Name for a great many Muſcles of the human Body. Thus there are the

Transversales Abdominis. See Abdomen.

Transversalis Anticus Primus.

This is a ſmall, pretty thick, and wholly fleſhy Muſcle, about the Breadth of a Finger, ſituated between the Baſis of the Os Occipitis, and the tranſverſe Apophyſis of the firſt Vertebra. It is fixed by one End, in the anterior Part of that Apophyſis; and from thence, running up a little obliquely, it is inſerted by the other End in a particular Impreſſion between the Condyle of the Os Occipitis, and the Maſtoide Apophyſis of the ſame Side, behind the Apophyſis Styloides, and under the Edge of the Jugular Foſſula.

For the Uſes of this and the following Muſcle, ſee Rectus Anticus.

Transversalis Anticus Secundus.

This is a ſmall Muſcle ſituated between the tranſverſe Apophyſis of the firſt two Vertebræ of the Neck. It is fixed by one Extremity, very near the Middle of the ſecond Apophyſis, and by the other near the Root or Baſis of the firſt; and therefore it is a Muſcle of the Neck rather than of the Head.

Transversalis Colli major.

This is a long thin Muſcle, placed along all the tranſverſe Apophyſes of the Neck, and the four, five, or ſix upper Apophyſes of the Back, between the *Complexus major & minor*, lying, as it were, on the Inſertions of the firſt of theſe Muſcles.

It is compoſed of ſeveral ſmall muſcular Faſciculi, which run directly from one or more tranſverſe Apophyſes; and are inſerted ſometimes in the Apophyſis neareſt to theſe, ſometimes in others more remote, the ſeveral Faſciculi croſſing each other between the Inſertions of the two *Complexi*, which are, alſo, croſſed by them. They have ſometimes a Communication with the *Longiſſimus Dorſi*; but this is not uniform.

The *Tranſverſalis major*, *Tranſverſalis gracilis*, and the little *Tranſverſales*, acting on one Side, can have no other Uſe, but to bend the Neck laterally; and to hinder theſe Inflections, when they act on both Sides. The ſmall *Tranſverſales* may, alſo, preſerve the Capſular Membranes of the Joints from being compreſſed, or otherwiſe hurt, by the Motions of the oblique Apophyſes.

Transversales Colli minores. See Inter-transversales.

For the Uſes of this Muſcle, ſee Transversalis Colli major.

Transversalis Digitorum.

This is a ſmall Muſcle, which lies tranſverſely under the Baſis of the firſt Phalanges, and which, at firſt Sight, appears to be a ſimple muſcular Body, fixed by one End to the great Toe, and by the other to the little Toe.

When this Muſcle is carefully examined, we find that it is fixed by a very ſhort common Tendon to the Outſide of the Baſis of the firſt Phalanx of the great Toe, conjointly with the Antithenar, and by three different Portions or Digitations to the three interoſſeous Ligaments, which connect the Heads of the four Metatarſal Bones next the great Toe, laterally to each other. Theſe three Portions are very ſlender, and gradually cover each other.

This Muſcle might be reckoned a ſecond *Antithenar*.

Transversalis Dorsi major. See Longissimus Dorsi.

Transversales Dorsi Minores.

I have found, ſays *Winſlow*, ſome particular Muſcles of this kind fixed to the Extremities of the three loweſt tranſverſe Apophyſes of the Back. The reſt are all, in ſome meaſure, Continuations of the *Tranſverſalis major*; but theſe few which are diſtinct; and which lie in the Interſtice between two Apophyſes, may juſtly enough be termed *Inter-tranſverſales*.

For the Uſes of theſe Muſcles, ſee Spinales.

Transversalis Gracilis, sive Collateralis Colli.

This is a long thin Muſcle, reſembling the *Tranſverſalis Colli major* in every thing but Size, and ſituated on the Side of that Muſcle. It is commonly taken for a Portion or Continuation of the *Sacro-lumbaris*. *Diemerbroek* diſtinguiſhed it by the Name of *Cervicalis Deſcendens*; and *Steno*, and others after him, have called it *Acceſſorius Muſculi Sacro-lumbaris*. See its Uſes under Transversalis Colli Major. *Winſlow*.

Transversales Lumborum. See Spinales.

Transverso-spinales Colli. See Semispinalis.

Transverso-spinalis Lumborum. See Sacer.

TRAPESIUS MUSCULUS. A Name for the Cucullaris.

TRASI. See Tragi.

TRAUMA, τραῦμα. A Wound. See Vulnus.

TRAUMATICA. Vulnerary Medicines. See Astringentia.

TRAUMATICUM DECOCTUM. A Vulnerary Decoction.

Take of Sarſaparilla, two Ounces; of the greater Comfrey, and Liquorice-roots, each ſix Drams; of white Dittany, two Drams; of ſtoned Raiſins, two Ounces; of the Shavings of Hartſhorn, half an Ounce: Boil them in a ſufficient Quantity of Spring-water, to ſtrain off four Pounds; adding towards the latter End, of the Leaves of St. John's-wort, Agrimony, Plantain, and Ground-ivy, each half an Handful; of the Flowers of the great Daiſy, one Handful; of Nettle-ſeed, two Drams: Strain out the Liquor for Uſe.

Another Vulnerary Decoction.

Take of the Tops of St. John's-wort, *Paul's* Betony, both Sorts, Periwinkle, Agrimony, each two Handfuls; Roots of *China*, Comfrey, white Sanders, Nephritic-wood, each an Ounce; Dates cut, thirty; Liquorice, an Ounce and an half: Infuſe all for twelve Hours in a ſufficient Quantity of Lime-water; and ſtrain to four Pounds; and thereto add Syrup of Mouſe-ear, and of the Juice of Fluellin, each two Ounces. Mix, and keep in a cold Place for Uſe.

TRECHON, τρέχων. Quickſilver. *Nicolaus Myrepſus*, *Sect.* 3. *c.* 97.

TRECHYSMA, τρήχυσμα. The ſame as Trachoma.

TREMATE *Braſilienſibus*. Marcgrav. *Tremaè* Piſoni *Frutex Braſilienſis flore compoſito, in pappos abeunte*. *Raii* 1783.

This Shrub in Figure reſembles the Pomegranate-tree; its Bark reſembles that of Elder; its Wood is white, and contains a Marrow. Its Leaves are of a dark-green Colour, and, when triturated, ſmell exactly like Storax; and are uſed by the *Braſilians* in Pains and Redneſs of the Eyes. *Raii Hiſt. Plant.*

TREMOR. See Pyretos.

TREPANATIO. The Operation of Trepanning. See Caput.

TREPANUM. The ſame as Terebella.

TREPONDO. Three Pounds.

TRIANGULARIS. Triangular. A Name of ſeveral Muſcles. Thus the Deltoide Muſcle is call'd the Triangularis Humeri. There is, alſo, the

TRIANGULARIS STERNI. See Sterno-costales.

TRIANGULUS. See Trigonos.

TRIBADES. See Malthacos.

Tho' the *Clitoris* is commonly concealed within the Lips of the Pudenda; yet in ſome Women it becomes ſo far prominent, that they are either, by ignorant Perſons, thought to be tranſform'd into Men, or make Attempts to converſe in a criminal manner with other Women. The unhappy Females, who pollute themſelves in this manner, are by the *Greeks* call'd Τριβάδες, and by the *Latins Fricatrices*, who, according to *Cœlius Aurelianus*, in *Lib.* 4. *Tard. Paſſ. Cap.* 9. are fonder of aſſociating themſelves with Women than with Men.

Henrica Schuria, a Woman of a maſculine Turn of Mind, being weary of her Sex, dreſs'd herſelf like a Man, and ſerv'd in Quality of a Soldier for ſome time under his Serene Highneſs *Frederic Henry* Prince of *Orange*, in the Siege of *Boiſleduc*. But returning Home, ſhe was accus'd of uncommon and preternatural Luſt, ſince her *Clitoris* ſometimes appear'd ſo far without the Lips of the Pudenda, that ſhe frequently attempted that Species of criminal Dalliance with other Women, which the *Greeks* call Κυτοείζειν. She could, alſo, perform what the *Greeks* call Τρίβειν with ſuch a Degree of Vigour and Virility, that ſhe pleas'd a certain Widow, of whom ſhe was exceſſively fond, ſo well, that, if the Laws of the Land had permitted, ſhe would have married her, perhaps more chearfully than ſhe had done her deceas'd Husband, by whom ſhe had ſix Children.

This Woman, in external Appearance had the ſame Configuration of the Parts of the Pudenda with other Women. But, according to the Declaration of three Midwives, internally, a little before the urinary Paſſage, there was evidently perceiv'd a certain glandulous Caruncle, call'd the *Clitoris*, which tho' in other Women it hardly exceeds the Bulk of a Nail, was yet ſaid to be half a Finger long in her, and in Thickneſs to reſemble the Penis of a Boy.

This Clitoris, tho' not always, yet ſometimes, appear'd without the Lips of the Pudenda, eſpecially when ſhe diſcharg'd her Urine with Difficulty, or was under the Influence of ſtrong Inclinations to her unnatural Crime; at which time her Clitoris protuberated half a Finger's Length, or ſometimes more, accord-

ing to the Strength of her Inclinations. *Johannes Poponius*, a celebrated Lawyer, in *L.* 22. *Tit.* 7. *Arest.* 11. is of Opinion, that such Women ought to be punished by Death. But *Henrica Schuria* had a milder Judge, and, being only whipt with Rods, was banish'd far from the Partner of her Crimes; who was, also, punish'd, tho' allow'd to remain in the City. *Tulpii Observat. L.* 3. *C.* 35.

TRIBE, τριβὴ, (from τρίβω, a Verb, besides its usual Significations of rubbing, breaking, and the like, importing, in a metaphorical Sense, Exercise and Employment) is Practice, Use, Exercise. Τριβὴ μετὰ λόγου is Exercise or Practice founded on Reason, and opposed to λογισμὸς πιθανὸς, a Persuasion grounded on mere Ratiocination. *Hippocrates, Lib. Præcept. prope Initium.* In the same Treatise, towards the End, τριβὴ and δογμάτων ἱστορίη, that is, Exercise, or Practice, and the Knowledge of Precepts or Rules, are set in Opposition; as are, also, in the Words which follow, δογμάτων πολυχρονίη, a comprehensive Knowledge of Precepts, and χειροτριβίης ἀτρεμίστης, the Usefulness and Stability of manual Operations and Practice. Τριβὴ, in this Sense, is express'd by *Hippocrates*, in this same Treatise, and in *Lib.* περὶ ἐυσχημοσ. by πρήγματα, Actions, Practice. *Quintilian, Lib.* 2. *Cap.* 16. renders τριβὴ by *Usus*, Use. *Foesius.*

TRIBOS, τρίβος, from τρίβω, to rub, in *Hippocrates*, signifies a well-trodden and frequented Path; but, in a metaphorical Sense, is taken for a Place much wore by long Attrition, or become callous, as we read in *Galen, Com.* 1. in *Lib. de Art.* Hence the Head of the Os Humeri, when it has continu'd long in a Place, whither it is remov'd by Luxation, and has work'd itself by continu'd Attrition into a kind of Settlement, is said by *Hippocrates, Lib. de Art.* τρίβον ποιεῖσθαι, "to make "a *Tribos.*" And in the same Treatise we read ὅταν μὲν ἓν τρίβον λάβῃ τὸ ἄρθρον ἐν τῇ σαρκὶ, "when the Joint shall ac-"quire a *Tribos* (a Settlement by Attrition) in the Flesh;" where he writes, that τρίβος is spoken by way of Metaphor taken from Places much worn by the Feet of Travellers. Again, in *Mochlic.* it is said, τὸ ἔθος τρίβον ποιέει, by which Words we are to understand, that Use induces a Callus on elapsed Joints. But in *Lib.* καλ. ἰητρεῖον, τρίβος, according to *Galen*, is that Part of a Member with which it operates when inflected, extended, or resting on one Side. Τρίβος, also, signifies that Part of the Body which is rubbed, or with which we act, or on which we stand, or lay any Stress, whether standing, walking, sitting, or lying; as the Soles of the Feet, when we stand or walk; the Buttocks, when we sit; and the Back, and hinder Parts of the Head, when we lie in a supine Posture: Some call that Part, on which the Stress is laid, *Mora*, Rest, because we rest, in a manner, on it; others, *Samita*, or *Callis*, a Foot-way, or Path, from its being, like these, subjected to continual Impressions.

TRIBULUS.

The Characters are;

The Root is annual; the Leaves are like those of the *Lenticula*, or *Cicer*. The Flower is rosaceous and pentapetalous; the Fruit cruciform, or turbinated, composed of a Multitude of small muricated Particles collected into an Head, in each of which are oblong Seeds disposed in their proper Cells.

Boerhaave mentions but one Sort of *Tribulus*; which is,

Tribulus; terrestris; foiio Ciceris; fructu aculeato. *C. B. P.* 350. Emac. *Boerh. Ind. A.* 298. *Tribulus terrestris.* Offic. Ger. 1066. Emac. 1246. Park. Theat. 1097. Raii Hist. 2. 1344. J. B. 2. 352. CALTROPS.

It grows in *Italy*, and flowers in *July*; and the Herb and Seed are used.

The *Tribulus* refrigerates and inspissates, cures Inflammations, Ulcers in the Mouth, and Putrefaction of the Gums. The Seed is commended against Poisons, and restores those who are bitten by Serpents. *Dale.*

This Plant, is refrigerating, aperient, astringent, and, taken inwardly, a Vulnerary: Hence it is of Service in a Diarrhœa, and the Stone. *Hist. Plant. adscript. Boerhaav.*

TRIBULUS AQUATICUS, *Nuces aquaticæ*. Offic. Ger. 676. Emac. 874. C. B. P. 194. J. B. 3. 775. Raii Hist. 2. 1321. *Tribulus aquaticus major*. Park. Theat. 1248. *Tribuloides vulgare aquis innascens*. Tourn. Inst. 655. WATER-CALTROPS.

The Root of this Plant grows deep under Water, being jointed, and full of Fibres at every Joint. The Leaves are somewhat like Poplar-leaves in Shape, being roundish and indented about the Edges, each standing on a long Foot-stalk. The Flowers arise immediately from the Root, being small and white, growing on separate Stalks; and are succeeded by large round prickly Heads, of a blackish Colour when ripe, containing a large eatable Kernel; it grows in standing Pools and Lakes in *Italy* and *Germany*, but no-where in *England.*

They are eaten as other Nuts in the Places where they grow; but as they are rarely to be met with here, so I never knew them applied to any physical Use. *Miller's Bot. Off.*

Tribulus aquaticus is, also, a Name in *Boerhaave* for several Sorts of *Potamogiton*; which see.

The Nuts, while new, are good against the Stone. The Herb is endu'd with the same Virtues as the *Tribulus terrestris. Dale.*

TRICA LUMBORUM. A Species of PLICA POLONICA. *Blancard.*

TRICAUDALIS. A Name for the TRICEPS AURIS.

TRICEPS AURIS, or RETRAHENS AURICULAM. The Name of a Muscle of the external Ear, called by *Winslow* the Posterior. See AURIS.

TRICEPS PRIMUS.

This, with the two following Tricipital Muscles, are fleshy and flat, and of different Lengths, situated between the Os Pubis, and the whole Length of the Os Femoris. The first and second cross each other in such a manner, as that the Muscle which is the first on the Os Pubis, becomes the second on the Os Femoris, and the second on the Os Pubis is the first on the Os Femoris. The third Muscle keeps its Rank.

The Triceps Primus is fixed above, by a short Tendon to the Tuberosity or Spine of the Os Pubis, and to the neighbouring Part of the Symphysis, its Fibres mixing a little with those of the Pectineus. Thence it runs down, increasing in Breadth; and is inserted by fleshy Fibres interiorly in the middle Portion of the Linea Femoris Aspera.

At the lower Part of this Insertion, a Portion of the Muscle separates from the rest, and sends off a long Tendon, which, together with a like Tendon from the Triceps Tertius, is inserted in the inner Condyle of the Extremity of the Os Femoris.

TRICEPS SECUNDUS.

This Muscle is fixed above by fleshy Fibres, below the superior Insertion of the Triceps Primus, in all the Outside of the inferior Branch of the Os Pubis as low as the Foramen Ovale; but seldom so low as the Branch of the Os Ischium. This Insertion is broader than that of the former Muscle.

From thence it runs down, and is inserted in the upper Part of the Linea Aspera, between the Pectineus and Triceps Primus, mixing a little with each of these Muscles. This Insertion appears sometimes divided.

TRICEPS TERTIUS.

This Muscle is fixed above by fleshy Fibres to the anterior Part of all the short Branch of the Ischium, and to a small Part of the Tuberosity of that Bone. This Insertion covers some Part of the Tendon of the Semi-membranosus, and is covered by that of the Semi-nervosus.

From thence it runs down, and is inserted by fleshy Fibres in the Linea Aspera almost from the little Trochanter, down to the Middle of the Os Femoris. It goes lower down than the first Triceps, sending off a separate Portion like that of the Muscle last-mentioned.

These two Portions join together, and form a common Tendon, which, running down to the lower Extremity of the Os Femoris, is inserted in the back Part of the Tuberosity of the inner Condyle. This separate Portion is sometimes large enough to be taken for a distinct Muscle, in which Case we have a Quadriceps instead of a Triceps.

In all this Progress this Muscle is joined to the Vastus Internus by a perforated Aponeurosis, through which the Blood-vessels pass

The three Triceps Muscles join in the same Use, that is, to move the Thigh inward, and bring the two Thighs near each other; as when, in riding, we press the Thighs close against the Saddle; when, in sitting, we hold any thing close between the Knees; when we cross the Thighs; or when, in standing, we bring the Legs close together, in order to jump.

The Use of these Muscles is, also, to hinder the Thighs from separating more than is convenient, especially in great Efforts and Jerks. This might happen, for Instance, when, in mounting an Horse, or laying the Leg over any Height, we raise one Thigh hastily, and support the Body on the other. It might, also, happen by the Weight of the Body alone, when, in standing, we separate both Legs at once, or jump hastily to one Side.

This Use of bringing the Thighs together, and hindering their Separation, has Place in all possible Situations of the Body or Thighs; that is, in standing, sitting, and lying, and when bent, extended, or turned backward, or outward. This shews the great Necessity of providing for this Function, not only by a strong moving Force, but, also, by distributing this Force in such a manner as that it may be able to act through almost all the Degrees of a very long Lever of one kind.

The longest Portion of the Triceps Tertius, being inserted in the Side of the inner Condyle of the Os Femoris, seems to counterbalance the other Portions, which are inserted more posteriorly in the Linea Aspera. *Winslow.*

TRICHIASIS, τριχίασις, from θρὶξ, an Hair, is a Disorder of the Eye, consisting in an Irritation thereof by the Eye-lashes; or, according to the Author of the *Definitiones Medicæ*, it is βλεφάρων πλῶσις, ὑπὸ τῶν ἐν αὐτοῖς τριχῶν γένεσις παρὰ φύσιν,

" a Falling of the Eyelids, and a preternatural Generation of " Hairs in them." He makes three Sorts of τριχίασις, to which he gives the Name of φαλάγγωσις (*Phalangoſis*), πλῶσις (*Ptoſis*), and ὑπόφυσις (*Hypophyſis*); to which ſome, he ſays, add διστιχία (*Diſtichia*). See theſe Words in their proper Places. In *Lib. de R. V. I. A.* this Diſeaſe is called *Trichoſis*, as, alſo, by *Actuarius*.

Trichiaſis, alſo, ſignifies an Affection of the Urine, when ſomething like Hairs is ſeen floating in it. Thus *Galen*, *Com. ad 4. Aph.* 76. ſays that " the more modern Phyſicians call " that Diſorder, when ſomething like Hairs, eſpecially white " ones, appear in the Urine, by the Name of *Trichiaſis*." Some call it *Pilimiction*, or Piſſing of Hairs; whence, in the Additions to the Book *de Natura humana*, they are called, τριχοειδέα σαρκία σμικρὰ ἐν τῷ οὐρήματι ξυνεξερχόμενα, " mi- " nute Pieces of Fleſh, like Hairs, mixed with the Urine;" and the ſame thing is expreſſed 14 *Aph.* 76.

Trichiaſis, in *Erotian*, is called an Abſceſs about the Breaſts of Women, when he expounds τριχιάσαι in *Hippocrates*: Whence I am perſuaded, that *Erotian* read that Paſſage, *Lib.* 2. περὶ γυναικ. as follows: ὁκόταν γυναικὶ ὁ μαζὸς τριχιάσῃ, " when the Woman ſhall have her Breaſt affected with " a *Trichiaſis*;" inſtead of which, it is written every-where, " τρηχὺς γένηται," ſhall become rough; ſo that *Trichiaſis* is a kind of Aſperity of the Breaſts, when they are affected with capillary Fiſſures, or rugous Inequalities, like very fine Sciſſures; in which Senſe, *Trichiaſis*, or *Trichiſmos*, ſignifies a very fine Species of Fracture, reſembling a Hair; and, under this Notion, *Erotian* ought rather to be read with ἀπόστχασις than ἀπόσασις, " an Abſceſs."

Trichaſis ſignifies, in the laſt Place, the *Pilare Malum*, as *Gaza* renders it, or the hairy Evil, which *Ariſtotle*, *Hiſt. Animal Lib. 7. Cap.* 11. calls *Trichia*, τριχία, where he ſays, by way of Deſcription, " the whole Breaſt is of ſo fungous a " Subſtance, that if the Woman happens to ſwallow an Hair in " drinking, ſhe is affected with a Pain in her Breaſt, which " ceaſes not, till the Hair is diſcharged either ſpontaneouſly, " or by Preſſure, or is ſucked out with the Milk." *Foeſius*.

Few Phyſicians have had an Opportunity of obſerving the τρίχωσις, or a Diſcharge of Hairs by Urine; and fewer ſtill, a Hiſtorical Return of this Diſorder. A memorable Caſe of the laſt-mentioned Kind I had in the Son of a Gentleman of Diſtinction, who was afflicted for more than four Years with a *Trichiaſis*, which return'd every fourteen Days with a conſiderable Difficulty in diſcharging his Urine, and ſo great an Uneaſineſs of Body, that he could hardly lie in Bed.

Every Hair in Length equal'd ſometimes half, and ſometimes a whole Finger's Length; but they were ſo cover'd and wrapt up in Mucus, that they were rarely diſcharg'd ſeparately, but, as it were, wrapt up. Every Paroxyſm laſted almoſt four Days; and tho' during theſe he continually render'd his Urine with Difficulty, yet he paſs'd the intermediate Days without any Pain, or Diſcharge of Hairs by Urine, till the freſh Paroxyſm returned. *Tulpius Obſervat. Medic. L. 2. C.* 52.

TRICHOMANES.

The Characters are;

The Leaves conſiſt of roundiſh Lobes, which are, in a manner, conjugated; and the Fruit is like that of the Filix, or Fern.

Boerhaave mentions two Sorts of *Trichomanes*; which are,

1. Trichomanes; ſive Polytrichon; Officinarum. *C. B. P.* 356. *Tourn. Inſt.* 539. *Boerh. Ind. A.* 25. *Trichomanes*. Offic. *Capillus Veneris*, Pharmacopolis. *Trichomanes*. Park. 1051. Raii Hiſt. 1. 140. Synop. 46. *Trichomanes mas*. Ger. 985. Emac. 1146. *Trichomanes ſive Polytrichum*. J. B. 3. 754. *Trichomanes, Polytrichum, Callitrichum*. Chab. 556. ENGLISH BLACK MAIDENHAIR.

The Root of this Maidenhair is compoſed of ſmall Strings or Fibres, from which ſpring ſeveral Leaves about a Span long, having a ſlender ſhining black Stalk, ſet on both Sides with ſmall roundiſh Leaves, ſometimes a little crenated about the Edges, and ſometimes not; whoſe under Part is covered, at the latter End of the Year, with ſmall duſty Particles, which is the Seed. It grows in hollow ſhady Lanes, and on old ſtone Buildings, being to be gathered in *September* or *October*.

This is what is commonly made uſe of in the Shops for the true *Capillus Veneris*, or Maidenhair, there being but a little of that to be had: It is reckoned to be much of the ſame Nature with the true; and to be pectoral, and good for Coughs and Conſumptions; to help the Stone, Gravel, and Stoppage of Urine; and to be, in all Caſes, a fit Succedaneum for the true *Capillus Veneris*. *Miller's Bot. Off.*

In the *Engliſh* Shops it is a *Succedaneum* for the *Adiantum verum*, or *Capillus Veneris*, which grows not ſpontaneouſly in *England*, and is ſuppoſed to have the ſame Virtues, and *Tragus* aſcribes the ſame Effects, to it. The Herb, boiled in Wine or Hydromel, and drank, removes Obſtructions of the Liver; cures the Jaundice; cleanſes the Lungs; helps Difficulty of Breathing; purges Melancholy by Urine; mollifies hard Tumors of the Spleen; expels Poiſon, and the Stone; and provokes the Menſes. The ſame Decoction, or the Powder of the Herb, or an Eclegma, or Syrup prepared of it, or the diſtilled Water, ſtops all ſorts of Fluxes of the Belly, and cools Inflammations of the Liver. A Lixivium of the Leaves reſtrains the Falling off of the Hair, the Head being waſhed therewith; and cures the Bites of Serpents, and other Animals. Some Farmers and Graſiers make a ſingular Uſe of the *Trichomanes*, in curing the Diſeaſes of their Swine. But let the Skilful judge, ſays *J. Bauhine*, whether an aſtringent, cold, and dry Herb can perform ſuch Effects as are aſcrib'd to the *Trichomanes*. The chief Virtues of this Plant, and which are allow'd it by all, were in its being adapted to the Cure of Pulmonic Fevers, the Gravel in the Kidneys, and the Strangury.

2. Trichomanes; foliis eleganter inciſis. *T.* 539. *Adianthum mas*. Tab. Ic. 797. *Boerh. Ind. alt. Plant.*

This Plant is, alſo, called Polytrichum, from πολὺς (*Polys*), much, and θρὶξ (*Thrix*), Hair; as much as to ſay, a capillary Herb, becauſe it is one of the Plants which go by the Name of *Capillary*.

Theſe Plants have their Seed-veſſels in the back Part of the Leaf; the *Trichomanes* have all the Properties of the Polypodium, except its cathartic Quality; it is aperient and pectoral, and of Service in Diſeaſes of the Spleen, and Obſtructions of the Menſes. *Hiſt. Plant. adſcript. Boerhaav.*

TRICHOPHYES, τριχοφυὲς, from τρίχες, the Hairs, and φύω, to grow.

TRICHOPHYLLON. A Plant, whoſe Leaves are ſmall, and reſemble Hairs, according to *Blancard*. But it ſeems rather to imply what Botaniſts call a capillary Plant.

TRICHOSIS, τρίχωσις. The ſame as TRICHIASIS.

TRICHOTON, τρίχωτον. The Hairy Sclap.

TRICOCCOS. The Medlar. *Blancard*.

TRICOR. Gold. *Rulandus*.

TRICOTYLOS, τρικοτύλος. A Meaſure of three Cotylæ.

TRICUSPIDES VALVULÆ. Three Valves plac'd at the Mouth of the Right Venticle of the Heart, juſt at its Juncture with the Auricle. See COR.

TRIDACTYLES. A Name in *Boerhaave* for ſeveral Sorts of *Saxifraga*.

TRIENS. Three Ounces.

TRIFOLIATA PALUDOSA. A Name for the *Menyanthes; paluſtre; latifolium; triphyllon*.

TRIFOLIUM.

The Characters are;

The Flowers are papilionaceous, or nearly ſo, obvolved, together with the Ovary, in a fimbriated Vagina, and diſpoſed in Spikes. The Ovary becomes a Capſula, which is concealed in the Calyx, and full of Seed; which is, for the moſt part, Kidney-ſhaped; and, when ripe, cloſely adheres to the Capſule: The Fruit itſelf is of a wonderful Variety of Forms; the Leaves are diſpoſed by Threes, rarely by Fours or Fives.

Boerhaave mentions thirty-ſix Sorts of *Trifolium*; which are,

1. Trifolium; montanum; purpureum; majus. *C. B. P.* 328.

2. Trifolium; Hiſpanicum; anguſtifolium; ſpicâ dilute rubente. *C. B. P.* 328. *Lagopus, anguſtivum, ſolius, Hiſpanicus*. Cluſ. H. 247.

3. Trifolium; montanum; ſpicâ longiſſimâ, rubente. *C. B. P.* 328. *Lagopus major, alter*. Dod. p. 578.

4. Trifolium; lagopoides; hirſutum; anguſtifolium; Hiſpanicum, flore ruberrimo. *M. H.* 2. 141. *Lagopus minor, flore ruberrimo*. Park. Theat. 1107.

5. Trifolium; montanum; anguſtiſſimum; ſpicatum. *C. B. P.* 328.

6. Trifolium; arvenſe; humile; ſpicatum; ſive Lagopus. *C. B. P.* 328. *Tourn. Inſt.* 405. *Raii Synop.* 3. 330. *Boerh. Ind. A.* 2. 31. *Lagopus Pes Leporinus*. Offic. *Lagopus vulgaris*. Park. Theat. 1107. Raii Hiſt. 1. 948. *Lagopus trifolius quorundam*. J. B. 2. 377. *Lagopodium ſive Pes Leporis*. Ger. 1023. Emac. 1193. HARES-FOOT.

This Plant ſeldom riſes very high, but ſpreads out into many ſlender Branches, having ſmall narrow hairy Trefoil-leaves ſet at every Joint: On the Tops of the Branches, grow ſhort round Heads compoſed of ſmall papilionaceous pale-purple Flowers, each ſet in a ſoft woody Calyx, making the Heads appear ſoft and downy. The Seed is ſmall, lying at the Bottom of the Calyx; the Root is little, and periſhes yearly. It is found frequently among Corn and in Fallow-fields, and flowers in *June* and *July*. The whole Plant is uſed, though not very often.

Hare's-foot is drying and binding, accounted good for a Diarrhœa and Dyſentery, and to ſtop the two great Flux of the Catamenia, and the *Fluor Albus*, and Spitting of Blood. It helps the Ulceration of the Bladder; Strangury, and Heat, and Pain, in making Water. It is ſold in our Shops for the *Hiſpidula*. *Miller's Bot. Off.* and *Dale*.

7. Trifolium; pratenſe; flore monopetalo. *Tourn. Inſt.* 404. *Boerh. Ind. A.* 2. 31. *Trifolium, Lotus Herba, agreſtis*. Offic. *Trifolium pratenſe*. Ger. 1017. Emac. 1185. *Trifolium pratenſe purpureum*.

purpureum. C. B. P. 327. Raii Hiſt. 1. 943. Synop. 3. 328. *Trifolium pratenſe purpureum vulgare*. Park. Theat. 1110. *Trifolium purpureum vulgare*. J. B. 2. 374. *Triphylloides pratenſis flore purpureo*. Pont. Anth. 241. COMMON TREFOIL.

The common purple Trefoil has three oval Leaves growing on the Top of pretty long hairy Foot-ſtalks; they are of a lighter Green underneath, and deeper above, having a white Spot in each Leaf. The Stalks grow to be a Foot or more in Height, with but a few, and thoſe ſhorter Leaves; but having a Couple of ſmall ones at the Bottom of the Flowers, which conſiſt of round Spikes of ſmall purple papilionaceous Flowers, ſet each in an hairy five-pointed Calyx; in which, afterwards, grow little ſhort Pods, including two or three ſmall, round, yellowiſh Seeds. The Root is long, ſlender, and ſpreading; it grows everywhere in the Fields and Meadows, flowering in *May* and *June*. The Leaves and Flowers are uſed, tho' but ſeldom.

They are drying and binding, and good for all Kind of Fluxes, as, alſo, for the Strangury, and Heat of Urine, made into a Cataplaſm with Hog's Lard. They are reckoned good for Tumors and Inflammations. *Miller's Bot. Off.*

It is hardly ever uſed in Phyſic. *Tragus* preſcribes the Flowers and Seeds, boiled in Wine, to eaſe acute Pains, and cut the glutinous Matters in the Inteſtines. He recommends them, alſo, boiled in Water or Oil, and apply'd in form of a Cataplaſm, to reſolve Tumors, where there is no Inflammation. *Martyn's Tournefort.*

8. Trifolium; purpureum; majus; foliis longioribus & anguſtioribus; floribus ſaturatioribus. *Raii Syn.* 194.

9. Trifolium; pratenſe; album. *C. B. P.* 327.

10. Trifolium; quadrifolium; hortenſe; album. *C. B. P.* 327. *Boerh. Ind. A.* 2. 31. *Trifolium purpureum*. Offic. *Trifolium phæum fuſcum luxurians quaternis, quinis & ſenis foliis*. Tourn. Inſt. 406. *Trifoliis affine quadrifolium Phæum Lobelii*. J. B. 2. 380. Raii Hiſt. 1. 942. *Quadrifolium fuſcum*. Park. Theat. 1112. *Lotus quadrifolia*. Ger. 1028. Emac. 1198. PURPLE WORT, and PURPLE-GRASS.

It is found in Meadows, whence it is taken, and carefully cultivated in Gardens; it flowers in Summer, and the Herb is uſed.

The Juice expels phlegmatic Humours from the Inteſtines, cures Ulcers of the Mouth and Tongue, is a Preſervative againſt the Small-pox, and is vulgarly eſteemed a preſent Remedy for the Purple Fever of Children.

11. Trifolium; fragiferum; Friſicum; folio cordato; flore rubro. *M. H.* 2. 144.

12. Trifolium; ſemen ſub terram condens. *H. R. P.*

13. Trifolium; pratenſe; luteum; capitulo Lupuli; vel agrarium. *C. B. P.* 328.

14. Trifolium; pratenſe; hirſutum; majus; flore albo ſulphureo, ſeu ὠχροληύκῳ. *Raii Synop.* 193.

15. Trifolium; floſculis albis, in glomerulis oblongis, aſperis, cauliculis proxime adnatis. *Raii Synop.* 195.

16. Trifolium; lupulinum; alterum; minus. *Raii Synop.* 195.

17. Trifolium; ſtellatum. *C. B. P.* 329. *Prodr.* 143.

18. Trifolium; ſiliquis Ornithopodii; noſtras. *Raii Syn.* 195.

19. Trifolium; pratenſe; folliculatum. *C. B. P.* 329. *M. H.* 2. 144.

20. Trifolium; globoſum; repens. *C. B. P.* 329. *Prodr.* 143.

21. Trifolium; elegans; flore inverſo. *Barrell. Obſ.* 73. *Ic.* 872.

22. Trifolium; Alpinum; flore magno; radice dulci. *C. B. P.* 328.

23. Trifolium; Africanum; fruticans; flore purpuraſcente. *H. A.* 2. 211.

24. Trifolium; Bitumen redolens. *C. B. P.* 327. *Tourn. Inſt.* 404. *Boerh. Ind. A.* 2. 32. *Trifolium bituminoſum*. Offic. Ger. 1019. Emac. 1187. Raii Hiſt. 1. 943. *Trifolium Aſphaltites ſive bituminoſum*. Park. Theat. 716. *Aſphaltites ſive Bituminoſum odoratum & non odoratum*. J. B. 2. 366. *Trifolium Aſphaltites ſive bituminoſum, Oxytriphyllum & Menianthes dictum*. Chab. 160. STINKING TREFOIL.

This is a ſhrubby Plant, a Cubit, or a Cubit and an half, in Height, with ſtiff, hoary, and, alſo, blackiſh, ſtriated Stalks, or Sprigs. The Leaves are, at firſt, round; but grow, by Degrees, long and accuminated; they are hoary alſo, and hairy; have the noiſome Smell of Bitumen, and are glutinous to the Touch. The Flowers are not quite collected into a Body, but diſpoſed on an oblongiſh Head, and are of a purple-violet Colour, and ſeated in oblong, ſtriated, villous Calyces. The Seed is black, rough, hairy, and ends in a foliaceous Point; it has the ſame Smell as the reſt of the Plant, and a medicated Taſte.

I have, for a long time, ſays *Ray*, cultivated a Plant reſembling this now deſcribed in all reſpects, except in that its Leaves are quite deſtitute of Smell, but the Flowers have a ſweet, tho' faint Scent. The Reaſon of this is given by *C. Bauhine*, when he ſays, that the Seed of this *Trefoil* from *Italy*, ſowed in *Germany*, produces a Plant of a bituminous Smell; but the Seed of a Plant grown in *Germany*, being ſown again, brings forth a Plant deficient in Taſte and, Smell; and if the Sowing were repeated, it is probable, that the Produce would degenerate into a Plant deſtitute of all Smell and Taſte.

It growsplentifully in *Italy*, *Sicily*, and in *Languedoc*, and *Provence*, on rocky Hills not far from the Sea; but is cultivated with us in Gardens, and flowers in *Auguſt*; and the Root, Leaves, and Seed, are uſed.

The expreſſed Oil of the Seed is highly commended for the Palſy. *D. Soam. Raii Hiſt. Plant.*

The Leaves and Seed, taken in Water, are effectual againſt the Pleuriſy, Dyſury, Epilepſy, Dropſy, and female Diſorders, and provoke the Menſes; they, alſo, cure the Bites of Serpents. The Root is alexipharmic. *Dale* from *Dioſcorides*.

25. Trifolium; Bitumen redolens; anguſtifolium.

26. Trifolium; ſtellatum; glabrum. *Raii Synop.* 194.

27. Trifolium; floſculis albis, in glomerulis oblongis, aſperis, cauliculis proxime adnatis. *Raii Synop.* 194.

28. Trifolium; capitulo oblongo, aſpero. *C. B. P.* 329.

29. Trifolium; Epithymi capitulis inter genicula; annuum.

30. Trifolium; minus; ſupinum; capitulis denſiori lanugine candicantibus. *Triumf.*

31. Trifolium; minus; ſupinum; flore flaveſcente; capitulis globoſis, parvis tomentoſum.

32. Trifolium; foliis parvis, lanuginoſis; flore pallide rubello; capitulo globoſo, lanuginoſo, molli.

33. Trifolium; capitulo ſpumoſo, lævi. *C. B. P.* 329. *Prodr.* 140.

34. Trifolium; cum glomerulis rotundis ad caulium nodos. *Raii Synop.* 194.

35. Trifolium; clypeatum; argenteum. *Proſp. Alpin. Exot.*

This is a very beautiful ſmall Plant, almoſt trails on the Ground, reſembles the *Trifolium pratenſe*, and grows in my botanic Garden at *Padua*, from Seed which I procured from *Candy*. It bears a ſilver-coloured Flower, void of Smell, but of a moderately acrid Taſte. Theſe Flowers, which are collected into a ſort of ſilver-coloured Heads, are ſucceeded by black, oblong, broad, thin, foliaceous Seeds, in Shape very much reſembling the old *Venetian* Bucklers. The Plant is annual, and the Seeds come to Maturity in Summer, and thrive well enough in the Soil of *Padua*.

The Flowers, Leaves, and Seeds, are moderately heating, drying, deterging, and digeſtive; and a Decoction, prepared of them all, is a potent Anodyne in Pains proceeding from Flatuoſities. *P. Alpinus de Plant. Exot.*

36. Trifolium; Alopecuron; ſpicâ globoſâ. *Barr. Ic.* 497. *Boerh. Ind. alt. Plant. Vol.* 2.

It is called *Trifolium*, from its three Leaves; and *Lagopus*, from λαγὼς (*Lagos*), a Hare, and πῆς (*Pys*), a Foot; Hares-foot, becauſe the Spikes on the Tops of the Branches repreſent the Figure of an Hare's Foot.

This Plant, eſpecially the ſeventh, eighth, and ninth Species, affords plentiful Fodder for Cattle; and much better than Graſs, and the Cattle are rendered much ſtronger by it, becauſe it remains longer in the Stomach. The twenty-fourth and twenty-fifth are called Bituminous, becauſe they have the Smell of a Species of *Bitumen Judaicum*; whence they afford, by Infuſion, a very penetrating Oil. *Hiſt. Plant. adſcript. Boerh.*

Trifolium is, alſo, a Name for ſeveral Sorts of *Melilotus*, *Medica*, and *Lotus*; all which ſee.

Trifolium acetoſum. See ACETOSELLA.

Trifolium album. A Name for the *Doryenium*; *Monſpelienſium*.

Trifolium arboreſcens. A Name for the *Cytiſus*; *glabris foliis, ſubrotundis*; *pediculis breviſſimis*.

Trifolium fruteſcens. A Name for the *Medicago*; *trifolia*; *fruteſcens*; *incana*.

Trifolium fruticans. A Name for the *Jaſminum*; *luteum*; *vulgò dictum bacciferum*.

Trifolium Halicacabum. A Name for the *Vulneraria*, *pentaphyllos*.

Trifolium Hepaticum. A Name for the *Hepatica*; *trifolia*; *cæruleo flore*.

Trifolium Luſitanicum. A Name for the *Sinapiſtrum*; *Luſitanicum*; *triphyllum*; *flore rubro*; *ſiliquis corniculatis*.

Trifolium paluſtre. A Name for the *Menyanthes*; *paluſtre*; *latiſolium*; *triphyllon*; and for the *Menyanthes*; *paluſtre*; *anguſtiſolium*; *triphyllon*.

Trifolium ſiliqua falcata. A Name for the *Medicago*; *annua*; *trifolii facie*.

TRIGLA, τρίγλα. The Mullet.

TRIGLOCHINES, τριγλωχῖνες. The ſame as TRICUSPIDES.

TRIGONA, τρίγωνα. The Name of certain narcotic compound Medicines mentioned by *Galen*.

TRIGONOS, τρίγωνος. The Name of a Troche, deſcribed by *Galen*, *de Comp. M. S. L. Lib.* 7. *C.* 5. and *Paulus Ægineta*, *L.* 7. *C.* 12.

TRIMESTRIS. This is an Epithet for Wheat, Meal, or Barley, which frequently occurs in medicinal Authors. It imports, that the Grain has been but three Months in the Ground. I cannot, with *Columella*, and *Bapt. Porta*, believe, that this is a diſtinct Kind of Wheat; but rather think, that Husbandmen, after a bad Autumn, ſow it by way of Recompence; that ſome of the Nations about the *Alps*, becauſe their Wheat cannot bear the Rigours of the Winter, and the Showers, they delay the Sowing

ing of it till the Spring; not becauſe they imagine, that it is a peculiar Kind, and would not thrive, if it was ſown in another more indulgent Soil, and elſewhere in *Italy*. Thus the *Triticum Trimeſtre* is unknown in moſt Countries; and Wheat for ſeveral Years ſown in the Spring, conſtitutes a certain particular Kind; for the Continuation of a Thing changes its Nature. Hence the Wheat, which has the Epithet *Trimeſtre* beſtowed on it, differs not from the common Wheat in Species, but only in a certain Weakneſs of Conſtitution. *Raii Hiſt. Plant.*

TRINCIATELLA. A Name for the *Sonchus*; *levis*; *angustifolius*

TRINITAS. A Name for the *Trifolium*; and, alſo, for the *Viola Tricolor*, according to *Blancard*.

TRIOBOLON, τριώβολον. The Weight of three Drams.

TRIOMPHYLLON. The Name of a Compound Medicine in *Meſue*. *Caſtellus*.

TRIOPHYLLUS ANTIDOTUS. The Name of an Antidote deſcribed by *Nicolaus Myrepſus*, *Sect.* 1. *C.* 212.

TRIORCHIS, τριόρχις. A Perſon who has three Teſticles; of which there have been ſome Inſtances. *Triorchis* is, alſo, a Sort of Hawk, called a Buzzard.

TRIOSTEOSPERMUM. *Doctor* Tinkar's *Weed, or falſe Ipecacuanha.*

The Characters are;

It hath a tubulous Flower conſiſting of one Leaf, divided into five roundiſh Segments, and incloſed in a five-leaved Empalement, having another Cup reſting on the Embryo; which, afterwards, becomes a roundiſh, fleſhy Fruit, incloſing three hard Seeds, which are broad at their upper Part, and narrower at Bottom.

Miller mentions but one Sort of this Plant; which is,

Trioſteoſpermum latiore folio flore rutilo. *Hort. Elth.*

This Plant is a Native of *New England*, *Virginia*, and ſome other Northern Parts of *America*; where it has been frequently uſed as an Emetic, and is commonly called Ipecacuanha. One of the firſt Perſons who brought it into Uſe, was Doctor *Tinkar*, from whence many of the Inhabitants call it by the Name of *Doctor* Tinkar's *Weed*. The Leaves of this Plant greatly reſemble thoſe of the true Ipecacuanha, but the Roots are very different; and, by the moſt authentic Account we have of the true Sort, it differs in Flower and Fruit from this Plant.

It grows on low marſhy Grounds, near *Boſton* in *New England*, very plentifully; where the Roots are taken up every Year, and are continued in Uſe amongſt the Inhabitants of *Boſton*. *Miller's Dictionary*, *Vol.* 2.

TRIPALE. See KANDEL.

TRIPETALOUS FLOWERS are ſuch Flowers as conſiſt of three Leaves, which are called Petals, to diſtinguiſh them from the Leave of Plants. *Miller's Dict. Vol.* 1.

TRIPHYLLON. Trefoil.

TRIPLOIDES, according to *Blancard*, is the Name of a chirurgical Inſtrument for elevating a large Depreſſure of the *Cranium*. See CAPUT.

TRIPOLIS, or TRIPOLITANA TERRA. See ALANA TERRA.

TRIPOLIUM. Offic. *Tripolium majus & minus.* J. B. 2. 1064. *Tripolium vulgare majus.* Ger. 333. Emac. 413. *Tripolium majus ſive vulgare.* Park. 673. *Tripolium majus cæruleum.* C. B. 267. *Aſter maritimus cæruleus Tripolium dictus.* Raii Synop. 80. *Aſter maritimus purpureus Tripolium dictus.* Raii Hiſt. 1. 270. *Aſter maritimus paluſtris cæruleus Salicis folio.* Tourn. Inſt. 481. SEA STARWORT.

It riſes from a tuberous Root to the Height of a Cubit, or a Cubit and an half. The Leaves are pretty like thoſe of the *Limonium majus*, narrower, but almoſt equal in Length, with the ſtrait Fibres of the Plantain leaf, ſmooth, thick, fat, ſometimes inclining to a cerulcous Colour, and diſpoſed about the Stalks and Branches in an irregular manner. The Flowers grow on the ramous Top of the Stalk, adhering to the Extremities of the Sprays; and are of a purple or cerulcous Colour [an Edge or Border of ſmall purple Leaves ſurrounding a middle yellow tufted Boſs], and vanith into Down

The *Tripolium majus & minus*, differing only in Size, are here put together. The *Tripolium. Flore nudo* has been known to grow about *Briſtol*, in great Plenty.

It grows, as *Lobel* truly obſerves, on the Sea-ſhores of *England* and *France*, and by the Banks of Rivers expoſed to the Ebbing and Flowing of the Tide. We obſerved a ſmaller Species in the ſalt Marſhes, not far from *Montpelier*. *Raii Hiſt. Plant.*

Two Drams of the Root, which is white, ſweet-ſcented, and hot in Taſte, purges off Water and Urine by Stool; it is, alſo, an ingredient in ſeveral pectoral Compoſitions. *Diſcorides*, *Lib.* 4. *Cap.* 135.

TRIQUETRA OSSA. Triangular Bones found in ſome Scalls. See CAPUT.

TRISCA, TRISTHA, or TRISSIA. The Name of a Fiſh, the ſame as MUSCULA.

TRISPASTUM APOLLINIDIS SEU ARCHIMEDIS. The Name of a Compound Machine, deſcribed by *Oribaſius*, in his Treatiſe *de Machinamentis*, *Cap.* 26.

TRISPERMON. The Name of a Cataplaſm conſiſting of the Seeds of Cumin, Apium, and Bay-berries.

TRISSAGO. See CHAMÆDRYS.

TRISTITIA. Sorrow. This relates to Medicine only, as it relaxes the Fibres, and is hence the Cauſe of various Diſtempers.

TRISTO, according to *Paracelſus*, is the material Fire contained in all the four Elements, and producing the proper Effects of each Element.

TRISULCÆ. The ſame as TRICUSPIDES.

TRITÆOPHYES, τριταιοφυὴς, from τριταῖος, tertian, and φύω, importing Similitude of Nature, or Original, is an Epithet of a Fever, much of a Nature with a Tertian, and taking its Riſe from it. It ſeizes the Patient on the third Day, and arrives almoſt at its Height, or Perfection, ſo as to be diſtinguiſhed from a Tertian, ſimply ſo called, a perfect Tertian, a lengthened Tertian, and a Semitertian, and to be a Sort of a Medium between them, as we are informed by *Galen*, *Com.* 2. *in Lib.* 6 *Epid.* where he, alſo, ſays, that τριταιοφυὴς may be, alſo, a general Epithet of all Fevers, which return with their periodical Fit, or Acceſſion, every third Day. But, in his *Com.* 1. *in* 1 *Epid.* though he diſtinguiſhes the *Tritaiophyes*, from a Semitertian in Name, yet he ſeems, in ſome meaſure, to join them together, as, alſo, *Lib. de Temp. Morb.* For it is of thoſe Kinds of Fevers, or Mixtures of Tertians and Semitertians, that *Hippocrates* ſeems to ſpeak, 1 *Epid.* where he ſays of them, τὸ μὲν ὅλον οὐκ ἐκλείποντες, παροξυνόμενοι ὃ τριταιοφυέα τρόπον, "they were not wholly intermit-"tent, but had their Paroxyſms, or Fits, after the manner of a "*Tritæophyes.*" And again, *ibid.* οἱ δ' ἀεὶ ξυνεχέες, &c. The Fe-"vers were continual, and never intermittent, but had Paroxyſms "after the manner of the *Tritæophyes.*" Here *Galen*, on the Place laſt-quoted, expounds the Word τεταιοφυὴς, of a kind of Conjunction of a Tertian and Semitertian.

Erotian, explaining the Fevers called τριταιοφυεῖς, from 6 *Epid.* tells us, that he thinks the Word τεταρταιοφυεῖς may be ſuppoſed to be uſed by ſome, inſtead of τριταῖοι, for the Smoothneſs or Elegance of the Term; but he ſeems to be rather of the Opinion of *Philonides Siculus*, who will have the *Tritæophyes* to be a Fever which gives Signs of its approaching Paroxyſms, but whoſe Intervals are regular, as it never arrives at Perfection; and that it takes its Name from its great Similitude to a Tertian; and that it is, alſo, called a ſmall Semitertian. In 6 *Epid. Sect.* 2. *Aph.* 15. it is ſaid, that the Night preceding a Fit of the *Tritæophyes* is very troubleſome. In 4 *Epid.* the *Tritæophyes* is mentioned with the *Epialodes*; and *Coac.* 33. a *Tritæophyes*, attended with an Anxiety, is ſaid to be malignant. *Ibid.* 37. we read of a wandering or uncertain *Tritæophyes.* And again, *ibid.* 26. we meet with τριταιοφυέα, ῥίγεα, "Rigors, ſuch as are incident to a *Tritæophyes.*" *Foeſius.*

TRITÆOS, τριταῖος. A Tertian.

TRITARII. The ſame as DIATRITARII. See DIATRITOS.

TRITICOSPELTUM. A Name for the *Triticum*; *ſpica Hordei Londinenſibus.*

TRITICUM.

The Characters are;

The Flowers are hermaphrodite, and apetalous, conſiſting of ſimple maſculine Stamina, furniſhed with their proper thin and ſlender Teſticuli, within which is ſeated the Ovary, furniſhed with a Pair of ſcirrhous and recurve Tubes, which are each defended by two petaloidal Leaves, often awned, by means of a long, ſharp, ſlender Appendix, which is ſometimes hairy, ſometimes ſmooth; they are, beſides, ſurrounded with two hollow carinated Leaves, inſtead of a Calyx. Theſe are ſuſtained by one Pedicle, a Number of which, growing to an Axis, conſtitutes a denſe Spike. The Seeds are large and oblong.

Boerhaave mentions eleven Sorts of *Triticum*; which are,

1. Triticum; Hybernum; ariſtis carens. *C. B. P.* 21. *Theat.* 351. *Tourn. Inſt.* 512. *Boerh. Ind. A.* 2. 155. *Triticum.* Offic. *Triticum ſpica mutica.* Ger. 58. Emac. 65. Park. Theat. 1120. Raii Hiſt. 2. 1236. Synop. 3. 386. *Triticum ſive ſiligo ſpica mutica.* Merc. Bot. 1. 75. *Triticum vulgare, glumas triturando deponens.* J. B. 2. 407. *Frumentum, Triticum.* Chab. 173. WHEAT.

This is the moſt common Wheat that is ſown with us, of which there are two Sorts, white and red; they grow alike, having an hollow Stalk, with uſually four Knots taller than Barley, but not ſo tall as Rye; the Spikes are three or four Inches long, without Awns or Beards, containing a longiſh, round, white, or reddiſh Grain, eaſily rubbed out from the Ear. Wheat is ſown in Autumn, and reaped in *July* or *Auguſt* following.

Wheat is moſt generally uſed, and the beſt Grain we have in *England*; the Bread made of it being more pleaſant and nouriſhing, than of any other Grain. It is more uſed for Food, than Medicine, tho' a Poultice made of it, boiled in Milk, eaſes Pains, and ripens Tumors and Impoſtumations; and a Piece of toaſted Bread, dipt in Wine, and applied to the Stomach, is good to ſtay Vomiting. Bran is ſometimes made uſe of in Cataplaſms, and applied hot in Bags, for Pains in the Sides.

There was formerly kept, in the Shops, an *Emplaſtrum de Cruſta Panis*; but it has been out of Uſe a great while. *Miller's Bot. Offic.*

Wheat,

Wheat, the more ponderous, the better it is, other Properties being alike; for which Reason our *London* Corn-factors sometimes buy Wheat by the Weight: It has something of Viscidity, and an obstruent Nature. The Characters of the best Wheat are, that it be new, of perfect Maturity, of a yellow Colour, very dense and ponderous; that, when macerated in Water, it swells very much, and very speedily; that it yields a great Quantity of Flour, and is free from all Mixture and Defects, as Tares, Cow-wheat, Blights, or Rust.

Among all Sorts of Corn, proper for Food, Wheat is esteemed the most excellent, not only for its highly nutritive Quality, but for its medicinal Uses, both internal and external, in many Diseases. *C. B.*

Of the Flour of Wheat, well fermented, is made the best Bread; and *Pliny* says, that *Amylum* is, also, prepared of it. Of the same, boiled in Water or Milk, are made the most convenient Pap-meats for Infants, which afford the best Nourishment, and are commended in a canine Appetite, and Impotence. They are of great Use, also, in Affections of the Fauces and Breast, Exulcerations of the Kidneys and Bladder, Fluxes of the Belly, and especially the Dysentery, being prepared as before, or of Broth, with an Addition of Butter. The Eating of raw Wheat causes Inflations of the Belly, and is not easily digested. *Galen* condemns the Use of boiled Wheat in Food; but we have often eaten it seasoned with Butter, and sweetened with Sugar, without the least Inconvenience.

Cato's Method of preparing the *Grana triticea* (which is the Name he has for a wheaten Ptisan, or a Sort of Spoonmeat of it) differs but little from that of our Preparation of wheaten Puls, or Spoon-meat, which we call Frumenty. "Put, he says, half a "Pound of pure Wheat into a clean Mortar; wash it, and "cleanse it carefully from the Husks; this done, after washing it "throughly, put it into a Pot with pure Water, and boil it; "when it is boiled, add thereto Milk, by little and little, till it "comes to the Thickness of a Cremor."

As to its external Use, there is prepared a Collyrium, in which *Wheat* is an Ingredient, for Weakness and Dimness of Sight, and to remove Specks and Films; for which latter Purpose, the expressed Juice of Wheat is, also, effectual. Wheat-flour, dissolved in warm Bean-water, clears the Face from Wrinkles. *Galen* mentions a Medicine of *Crispus*, prepared of Wheat, for a recent Lichen on the Chin, or any other Part of the Face.

Put a good Number of Grains of Wheat upon an Anvil; then take a Plate of Brass, or Iron, for it is all one, heated in the Fire, and lay it upon the Wheat; the hot Liquor, which by this means comes from the Wheat, must be taken off, and rubbed upon the Lichen. By this Remedy alone, we have known many cured; and is not only good for a Lichen of the Face, but for all Sorts of Herpes and Impetigo, as we have experienced. The same is effectual in sinuous Ulcers, Chaps of the Feet or Hands, proceeding from Cold; and to render the Skin smooth, and free from Asperities.

Wheaten-flour, mixed with Oil, and applied in the Form of a Cataplasm, tho' better with boiled Water, and an Addition of Oil, mollifies the Hardness of the Breasts, and ripens Impostumes of the Liver, Spleen, and other Parts. Flour boiled in Vinegar, and apply'd, is effectual in Contractions of the Nerves, and for hanging Breasts. Crude Wheat chewed, and applied to the Place, is said to be effectual for the Bite of a mad Dog; the same ripens Abscesses of the Eyes.

To provoke Excretion by Stool, make a Paste of two Parts Flour, and one Part Salt, with the White of an Egg; and, reducing it to the Form of a Suppository, rub it over with Oil or Butter, and intrude it into the Anus. For the Gout, it is a good Remedy to put the Feet and Legs up to the Knees into Wheat, by which *Sextus Pompeius*, as *Pliny* relates, was freed on a sudden; but the Cure would succeed better, if the Wheat were first tossed in a Vessel, and heated at the Fire

For all Pains of the Joints, of what Kind soever, is prepared a Cataplasm of Wheaten and Barley-meal, with the Flowers of Chamomile and Roses, each two Ounces, boiled in Water; to which afterwards is added, of the Oils of Chamomile and Roses, each one Ounce: It is to be apply'd hot.

The Ferment or Leaven of Wheaten-meal is endued with the Virtue of heating, extracting, and maturating; it wastes Callosities in the Soles of the Feet, and with Salt maturates and opens a Furunculus, and other Sorts of Tubercles.

Bran is of manifold Use; it serves instead of Soap, to scour the Hands, being mixed in the Water; and, besides, renders the Hands soft and white. Water, in which, when heated, Bran has been infused for a Day and a Night, is good to deterge the Furfur of the Head; and a Gargarism of the Decoction of Bran mitigates the Pain and Asperities of the Fauces.

Bran boiled in Water, then put into a Bag, squeezed dry, and apply'd hot, removes the pungent Pains of a Pleurisy, if the Bag, when cooled, be heated in the same Water, then again squeezed and apply'd, and this Method be several times repeated.

It is certain, that Bran has an abstersive Virtue, by which the Intestines are stimulated to Excretion. Bread, therefore, which is made of Flour not throughly cleansed from the Bran, provided it be duly fermented, seems to us to be more wholsome, and, also, more savoury, than what is made of pure Flour, or Siligo. For outward Use, Crums of Bread serves for much the same Purposes as Wheaten-flour. *Galen* writes, that a Cataplasm, prepared of Bread, is more digestive than one of Wheat, because Bread has a Mixture of Salt and Leaven; and his Opinion seems consonant to Reason, and is confirmed by Experience.

Far is of two Kinds, native and factitious. The first is a Sort of frumentaceous Grain; the latter seems to be taken, by *Pliny*, for the Meal, Puls, or decorticated Grain of the *Far*; where he tells us, from *Verrius*, that, for three hundred Years, the *Romans* used nothing but *Far*, prepared of *Frumentum*. *Far*, according to *Aetius*, is any Kind of Frumentum, or frumentaceous Grain, first decorticated, and cleansed from the Husks, and afterwards broken into some Parts, and dry'd.

Athera, *Puls*, and *Gluten*, as prepared from Wheat, differ only in Consistence. For the first, see the Article ATHERA. The *Gluten*, or Paste, as prepared of the Flour of Wheat, is more thick and solid than the *Athera*, and serves to conglutinate Papers; it is esteemed good for an Hæmoptoe, on account of its being an Agglutinant. *Puls* is a middle Preparation between them, as being thicker, and more solid, than the *Athera*, and more liquid than the *Gluten*; consequently, it is less obstruent of the Viscera, than the *Gluten*; but has more of that Quality, than the *Athera*. A Kind of *Athera*, or rather *Puls*, is that Sort of Food, which, *Galen* tells us, is made of Wheaten-flour mixed in great Proportion with Milk, an Aliment which all *Lower Germany* very frequently uses at this Day [I suppose he means the *Puls* which we call Hasty-pudding]. This is a Food of good Juice, and very nutritive; but hurtful to those who daily use it; for it causes Obstructions in the Liver, and generates Stones in the Kidneys, as we are taught by *Galen*. *J. Bauhine.*

Tragus is a factitious Thing. It was made of several Sorts of Corn, or frumentaceous Grain; as appears by comparing together, those Places of *Dioscorides*, *Galen*, and *Pliny*, where they treat of it. It differs from the *Chondrus* and *Alica*, principally in the Way of Preparation; for the *Chondrus* was completed with Gypsum and Sand, the *Alica* was cleansed with Chalk, but the *Tragus* was excorticated by Maceration in Water alone. *Raii Hist. Plant.*

Among the Preparations of this Grain may, perhaps, be reckon'd the *Vermicelli* made at *Genoa*, so called from their Likeness to small filamentous Worms. They are of two Kinds, the *white* and the *yellow*, and are used in the Kitchens of the Nobility and Gentry for Broths and Soops, and are thought to have an analeptic Virtue. *Dale.*

For other Preparations of Wheat, with their Uses and Virtues, see the Articles ARTOS, PANIS, ALICA, AMYLUM, FURFUR, FARINA.

2. Triticum; spica multiplici. *C. B. P.* 21. *Theat.* 371. *M. H.* 3. 175.

3. Triticum; spica Hordei Londinensibus. *Raii Synop.* 3. 387. *Tourn. Inst.* 512. *Boerh. Ind. A.* 2. 155. *Zeopyrum.* Offic. *Zeopyrum seu Triticospeltum.* C. B. P. 22. Theat. 423. Park. Theat. 1123. *Hordeum nudum.* Ger. 66. Emac. 72. *Hordeum nudum sive Gymnocrithon.* J. B. 2. 430. Raii Hist. 2. 1908. NAKED BARLEY.

The Spike, or Ear, of this Grain is bearded like that of Barley, but the Corns are rediish, sharp at both Ends, sulcated on one Side, and shewing a longish Bud proceeding from the Mucro, or Point on the Side opposite, covered with a simple Husk, which is more easily rubbed off, than that of Wheat. The Rows of Grain, if an Observation may be taken of them, seem to be four; to which we may add, that the Leaves are broad, and much envelope the Stalk. *Raii Hist. Plant. p.* 1908.

It is sown in *Germany*, where it serves to make Bread, and other Sorts of Food, and is no less used than Barley.

The *Gymnocrithos* is of a refrigerating Quality, like the Hordeum, or Barley, being administered in Broths.

4. Triticum; siligineum. *C. B. P.* 21. *Theat.* 355.

5. Triticum; spica & granis rubentibus; culmo rubro.

6. Triticum; spica & granis rubentibus; culmo luteo.

7. Triticum; majus; longiore grano, glumis foliaceis incluso. *M. H.* 3. 175.

8. Triticum; spica quadrata; villosa, breviori.

9. Triticum; spica quadrata; villosa, longiori.

10. Triticum; spica albicante; granis rufescentibus; sive Triticum mixtum. *M. H.* 3. 175.

11. Triticum; aristis circumvallatum; granis & spica rubentibus; glumis lævibus, & splendentibus. *Raii Synop.* 244.

The following Grasses are reckoned, by *Boerhaave*, among the Species of Wheat.

1. Gramen caninum; Spicæ Triticeæ aliquatenus simile. See AGROSTIS.

2. Gramen latifolium; spica triticea, latiore, compacta. *C. B. P.* 8. *Prodr.* 17. *It. J. B.* 2. 477.

3. Gramen; caninum; longius radicatum majus. *C. B. P.* 1. *Theat.* 12

4. Gramen; caninum; longius radicarum minus. *C. B. P.* 1. *Theat.* 12.

5. Gramen; caninum; maritimum; ſpicatum. *C. B. P.* 1. *Theat.* 14.

6. Gramen; caninum; maritimum; ſpicâ foliaceâ. *C. B. P.* 2. *Theat.* 15.

7 Gramen; maritimum; vulgari canino ſimile. *Park. Lob. M. H* 3. 178.

8 Gramen; geniculatum; parvum; arenoſorum aggerum maritimorum Zelandiæ, longius radicatum. *Lob. M. H.* 3. 178.

9. Gramen; anguſtifolium; ſpica Tritici muticæ ſimili. *C. B. P.* Prodr. 17. Theat. 132. *Boerh. Ind. alt. Plant.*

TRITICUM INDICUM. A Name for the *Mayz*; *granis aureis.*

TRITICUM TEMULENTUM. A Name for the *Lolium, verum*; *Geſneri*; *Lolium*; *album.*

TRITICUM VACCINUM. A Name for the *Melampyrum*; *comâ purpuraſcente.*

TRITIO. Triture.

TRITOMA. An Inſtrument us'd in Diſorders of the Ears. *Caſtellus* from *Albucaſis.*

TRITORIUM. A Chymical glaſs Inſtrument, open at both Ends, like a Funnel, narrow at the Top, but more ſo at the Bottom, but wide in the Middle. Its Uſe is to ſeparate Liquors of different ſpecific Gravities; for when the heavieſt is run out, the inferior Orifice is ſtopt, and the lighteſt is kept in the Veſſel.

TRITURA. Triture.

TRITURATIO. Triture, or Trituration.

This is principally employ'd to reduce hard Subſtances to fine Powders, either by the Mortar, or by way of Levigation upon a Marble. There is little Difficulty in this, beſides the Labour.

Trituration has a great Share in ſome Inſtances, in raiſing or depreſſing the Efficacy of what comes under its Management. For, in grinding, all thoſe Bodies whoſe Efficacy conſiſts much in the peculiar Shape and Points of their component Parts, the more and finer they are broke, the leſs will they operate: Thus may Calomel be render'd much gentler, and made capable of being given in much larger Quantities, only by long rubbing in a glaſs Mortar: For the continual Triture has the ſame Effect upon it, as repeated Sublimation, which is only breaking of the ſaline Spicula more and more, until it becomes almoſt plain Mercury. But in reſinous Subſtances, particularly thoſe which are purgative, as Jalap, Scammony, *&c.* the finer the Powder they are reduced into, the greater is likely to be their Efficacy: As the Senſe which the Stomach and Bowels have of them, is in Proportion to their Contacts, therefore, the more the ſame Quantity is divided, the further will it diffuſe itſelf, and vellicate the Fibres; that is, in other Words, it will work the more.

TRIUMFETTA.

The Characters are;

It hath a Flower conſiſting of ſeveral Petals, which are placed circularly, and expand in form of a Roſe: From whoſe Empalement ariſes the Pointal, which afterward becomes an hard ſpherical burry Fruit, incloſing four angular Seeds.

Miller mentions two Sorts of *Triumfetta*; which are,

1. Triumfetta fructu echinato racemoſo. *Plum. Nov. Gen.*

2. Triumfetta fructu echinato racemoſo, minor. *Miller.*

The firſt of theſe Plants is very common in the Iſland of *Jamaica*, and ſeveral other Parts of *America*; but the ſecond Sort is more rare, being found in but few Places. The Seeds of this Kind were ſent to *England* by Mr. *Robert Miller*, who diſcovered the Plant on the North Side of the Iſland of *Jamaica.*

The Flowers of theſe Plants are ſmall, and of a yellow Colour, ſomewhat like thoſe of Agrimony; for which the Plant has been by ſome ranged under that Genus. Theſe Flowers are produced in Branches, at the Extremity of the Shoots; but as they are not very beautiful, ſo they are ſeldom preſerved, but in ſuch Gardens, where Variety is principally intended.

The firſt of theſe Sorts riſes to the Height of ſix or ſeven Feet, and the Stem becomes woody. Toward the Top it divides into ſeveral Branches, each of which produces a Spike or Bunch of Flowers. The Leaves of this Sort are pretty large, and ſhap'd like thoſe of the larger *Malvinda.*

The ſecond Sort ſeldom riſes more than three Feet high, and has ſmaller Leaves than the firſt. The Stem of this Sort is woody, but it doth not branch ſo much as the former, and is in every reſpect a much leſs Plant than that. *Miller's Dictionary.*

TRIXAGO, the ſame as *Triſſago.* See CHAMÆDRYS.

TROCHANTERES. Two Proceſſes of the Thigh-bone are thus call'd. One is the greater; the other the leſſer *Trochanter.*

TROCHILODES, τροχιλώδης. An Epithet for the round Part of the Arm, in *Galen de Uſu Partium*, L. 2. C. 15.

TROCHILUS. The Wren.

TROCHISCI.

The Form of Troches, is in all reſpects blamed by ſome Commentators on the officinal Diſpentatories, particularly by *Saſſenus*, who wonders how it came to be contrived at all: But there are certainly ſome good Reaſons for it, as it either better preſerves thoſe things againſt their Time of Uſe, which would decay in Powder; or aſſiſts in a particular manner of taking them, by gradually diſſolving in the Mouth.

The *Trochiſci Hyſterici* are an uniform and efficacious Compoſition; but ſtill ſeem to give place to thoſe *de Myrrha*, which are of the ſame Intention, and ſomething preferable in two reſpects: For every Ingredient in them fully coincides with the main End, and they are more ready in this Form for extemporaneous Occaſions, than the ſame things could be in any other, or in their natural Productions. The *Trochiſci de Terrâ Japonica*, are not yet come much into Acquaintance; but are ſo eaſily made, and ſo much pleaſanter to take, than any other of this Form in the like Intention, that they are much to be preferred to the *Trochiſci Gordonii*, and *de Terra Lemnia.* The *Trochiſci Bechici albi* and *nigri* are both calculated likewiſe to diſſolve gradually in the Mouth, and for the ſame Intention; the former are by much more grateful, but the latter more efficacious. The *Trochiſci Alhandal* might be mention'd among thoſe for inward Uſe; but they are ſo much in Neglect, unleſs in a few officinal Preſcriptions, that it is hardly worth Inquiry, whether the Reduction of the Colocynth from ſix Ounces to ſix Drams, in the laſt Alteration of the College, be Miſtake or not. The *Trochiſci albi Rhaſis* are ſo nicely contrived for cooling Lotions, and are principally uſed in Solution, with Plantain or Roſe-water, againſt Inflammations, and hot Defluxions upon the Eyes; the uſual Quantity is about half a Dram to two Ounces of Water, which, when diſſolved, looks white as Milk. The *Trochiſci de Plumbo*, are deſigned for the ſame Purpoſes; but are a much coarſer Medicine, and therefore hardly ever preſcrib'd.

There are many things, which might be contrived into this Form for extemporaneous Uſes, in the manner of the *Trochiſci Bechici*, and ſeveral Medicines are reduced under the Title of Lozenges; but the ſame Intentions are anſwerable by things in other Forms, with more Certainty; and few caring to be troubled with them, they are hardly ever met with in regular Preſcriptions; though, for the Preſervation of ſome things for preſent Uſe, it is a very ſerviceable Form, as hath been already obſerved, concerning the Troches of Myrrh, and ſome other officinal Compoſitions of the like Nature. *Quincy's Prælect. Pharm.*

TROCHISCI ALBI RHASIS.

The white Troches of Rhaſes.

Take of Ceruſs waſhed with Roſe-water, ten Drams; of Sarcocolla, three Drams; of Starch, two Drams; of Gum Arabic, and Tragacanth, of each one Dram; of Camphire, half a Dram: And make them all together into Troches with a ſufficient Quantity of Roſe-water.

Theſe are diſſolv'd in White-wine, Roſe-water, or any other Liquid, to make Collyria for the Eyes. They aſſwage Inflammations, and ſometimes repel hot corroſive Rheums. The ſame are ſometimes uſed for Injections in Gonorrhœas to cool the Urethra, and defend it againſt the Corroſions of the gleeting Humours. Two Drams diſſolved in two Ounces of Liquid, is the uſual Proportion of Mixture; with which the affected Part is to be frequently waſhed.

TROCHISCI ALEXITERII. See ALEXITERIA.

TROCHISCI ALHANDAL. See ALHANDAL.

TROCHISCI ALIPTÆ MOSCHATÆ. See ALIPTÆ.

TROCHISCI ALKEKENGI. See ALKEKENGI.

TROCHISCI APOPLECTICI.

Lozenges againſt the Apoplexy.

Take Ambergriſe, half a Dram; Oil of Roſemary, Cinnamon, Nutmeg, of each two Drops; Oil of Cloves, and Marjoram, of each one Drop; Spirit of Lavender, eighty Drops; fine Sugar, four Ounces: Make into Lozenges with a ſufficient Quantity of the Mucilage of Gum Tragacanth.

Theſe are proper to chew, and roll about in the Mouth frequently, by ſuch who are ſubject to apoplectic Diſorders: For this way the warm Aromatics more immediately penetrate the Fibres, than when ſwallowed at once into the Stomach.

TROCHISCI BALSAMICI.

Balſamic Lozenges.

Take Balſam of Tolu, Orrice root, of each one Ounce; Gum Tragacanth and Arabic, of each half an Ounce; Flowers of Benjamin, two Drams; white Sugar-candy, one Pound. When all are reduced to fine Powder, make them into a Paſte, with Mucilage of Quince-ſeeds and Roſe-water for Lozenges.

These make a most grateful and efficacious Remedy in all Kinds of Coughs, but particularly those from tickling Defluctions and Rheums. They will, also, greatly contribute to restore decaying Lungs, and Persons almost worn out in Consumptions. On no Account can they disagree, and almost in all Cases will they prove of great Service. They may be, also, used at Pleasure.

TROCHISCI BECHICI ALBI. See BECHICA.

TROCHISCI BECHICI NIGRI. See BECHICA.

TROCHISCI DE BENZOINO.

Troches of Benjamin.

Take Sugar-candy, one Pound; melt it in Rose-water; then taking it from the Fire, dissolve in it strained Storax, one Ounce; which stir well together; and, when almost cold, sift in fine Powder of *Benjamin*, six Drams; Aloes-wood, half an Ounce; Orrice-root, one Ounce; Musk, one Scruple: And with a sufficient Quantity, if any be wanting, of the Tragacanth, Mucilage, and Rose-water, make them into a Paste.

This is an admirable Balsamic, and would be of great Service to such who are subject to Diseases of the Breast, and inclinable to Consumptions, if frequently taken. They give, also, a very agreeable Sweetness to the Breath. They may be used at Discretion. If the Aloes-wood was omitted, they would be never the worse, but rather more grateful. These are from the *Pharmacopœia Regia*.

TROCHISCI DE CARABE.

Troches of Amber.

Take of Amber, one Ounce; of burnt Hartshorn, Gum Arabic, red Coral, Gum Tragacanth, Acacia, Hypocystis, Balaustines, Mastich, Gum-lacca washed, and black Poppy-seeds, of each two Drams and two Scruples; of Frankincense and Saffron, of each two Drams; of Opium, one Dram: And make them all into Troches with a sufficient Quantity of the Mucilage of Fleawort-seeds made in Plantain-water.

This Composition is ascribed to *Mesue*, and seems designed against Hæmorrhages, and principally Spitting of Blood.

TROCHISCI CEPHALICI.

Cephalic Lozenges.

Take *Pulvis de Gutteta*, and native Cinnabar, of each half a Dram; Oil of Rosemary, and Nutmegs, of each two Drams; fine Sugar, two Ounces; Mucilage of Gum Tragacanth, a sufficient Quantity.

TROCHISCI CYPHEOS PRO MITHRIDATICO. See CYPHI.

TROCHISCI AD EMULGENDUM SALIVAM.

Lozenges to occasion Spitting.

Take Pellitory of *Spain*, in fine Powder, half an Ounce; Mastich, two Drams; Oil of Cloves, and Marjoram, of each two Drams. Make into Lozenges or Pellets, with a sufficient Quantity of the best-scented yellow Bees-wax.

These may be of Use to such who want a Discharge of Rheum from the Glands about the Mouth, and cannot comply with the Custom of smoking Tobacco for that Purpose. For a great many Complaints arise from those Parts being overcharged with Moisture, for which this would be a convenient Drain; the Heat of it irritating the Glands to the Discharge of their Contents.

TROCHISCI GORDONII.

Gordon's Troches.

Take of the Four greater cold Seeds blanched, of the Seeds of white Poppies, Mallows, Cotton, Purslain, and Quinces, of Myrtle-berries, Gum-tragacanth, and Arabic, of Pistachios and Pine-nuts cleansed, Sugar-candy, Liquorice, Barley, Mucilage of Fleawort-seeds, and sweet Almonds blanched, of each two Drams; of *Armenian* Bole, Dragon's-blood, Spodium of Ivory, and red Rose-flowers, of each half an Ounce: Let them be made into Troches, *S. A.* with a sufficient Quantity of the Mucilage of Gum Tragacanth.

It was originally prescribed by *Gordonius*, *de Passionibus Renum*, *Cap* 10. It is intended for some Distempers of the Kidneys, and urinary Passages; but it is not often described, and for that Reason it is seldom to be met with in the Shops.

TROCHISCI HEDYCHROI GALENI AD THERIACAM. See HEDYCHROI.

TROCHISCI HÆMOPTOICI.

Lozenges against Spitting of Blood.

Take Japan Earth, two Drams; astringent Saffron of Steel, one Dram; Sugar of Lead, and Starch, of each half a Dram; fine Sugar, four Ounces; Mucilage of Gum Tragacanth, a sufficient Quantity to make them into Lozenges.

These may be taken at Discretion, by any who are subject to spit Blood; and they will, also, do Service in any Sort of Fluxes, whether of the Belly, or other Parts.

TROCHISCI HYSTERICI.

Hysteric Troches.

Take of Asafœtida, and of Galbanum, of each two Drams and an half; of Myrrh, two Drams; of Castor, one Dram and an half; of the Roots of Asarum, long Birthwort, of Savine, Motherwort, and Calemint, of each one Dram; and of Dittany, half a Dram: Let the Gums be soaked in the Juice or Decoction of Rue, and strained and boiled up to the Thickness of Honey; and then add the other Ingredients, finely powdered, so that the Whole may be made into Troches, *S. A.*

They are well contrived to the Purpose their Title denotes; and are very effectual in all uterine Disorders, to allay Vapours, Convulsions, to promote the Menses, to assist Delivery, and all that belongs to rectifying the Diseases of those Parts. They are conveniently reducible into Powder, for any extemporaneous Form; and may be given from five Grains to one Scruple for a Dose.

TROCHISCI DE LIGNO ALOES.

Troches of Aloes-wood.

Take of Aloes-wood, and red Roses, of each two Drams; of Mastich, Cinnamon, Cloves, *Indian* Spikenard, Nutmegs, Carrot-seeds, the greater and lesser Cardamoms, Cubebs, Gallia Moschata, Citron-peels, and Mace, of each one Dram and an half: And make them into Troches with the Pulp of Raisins, half a Scruple of Ambergrise; and Musk may be added at Pleasure.

TROCHISCI DE MYRRHA.

Troches of Myrrh.

Take of Myrrh, three Drams; of the Leaves of Rue, Horse-mint, and Cretic Dittany, of Cumin-seeds, Asafœtida, Sagapenum, *Russian* Castor, and Opopanax, of each two Drams: Let the Gums be dissolved in a Decoction of Mugwort, and the rest be thrown in, so that the Whole may be made into Troches, with a sufficient Quantity of the Juice of Mugwort, *S. A.*

These were first prescribed by *Rhasis*, *Cap.* 9. *ad Almansorem*, against Obstructions of the Menses. This Medicine is so approved as to be pretty much called for in common Prescription, and esteemed beyond the Hysteric Troches before directed for the same Purposes.

TROCHISCI ODORATI.

Perfumed Lozenges.

Take Musk, and Ambergrise, of each six Grains; grind them fine with a little white Sugar-candy, and ten Drops of Spirit of Roses; then put to them Powder of Orrice, four Ounces; Starch, two Ounces; fine Sugar, four Ounces; and Gum Tragacanth, a sufficient Quantity.

These are of no great Service, unless to those few who delight in Sweets, and to disguise a stinking Breath.

TROCHISCI PARALYTICI.

Lozenges against the Palsey.

Take Sugar in fine Powder, one Ounce; compound Spirit of Lavender, sixty Drops; Oil of Rosemary, four Drops; with a sufficient Quantity of Mucilage of Gum Tragacanth.

These may be given at Discretion, to such who are inclinable to nervous Disorders, as they are best liked.

Trochisci Peruviani:

Peruvian Lozenges.

Take of *Peruvian* Bark, one Ounce; reduce it into a moſt fine Powder; Balſam of Tolu, two Drams; of Gilead, half a Dram; Sugar, half a Pound; Mucilage of Gum Tragacanth; a ſufficient Quantity to make them into Lozenges.

They who can take theſe, will find Service from them in all hectic Indiſpoſitions, and beginning Conſumptions.

Trochisci sive Sief de Plumbo. See Sief de Plumbo.

Trochisci de Rhabarbaro.

Troches of Rhubarb.

Take of choice Rhubarb, ten Drams; of the Juice of Eupatorium (*that is, of the Ageratum Meſues*) inſpiſſated, of each half an Ounce; of red Roſes, three Drams; of Aſarum-root, Madder, and Spikenard, of the Leaves of Wormwood, of the Seeds of Aniſe and Smallage, of each one Dram: And, with the depurated Juice of Eupatorium, make them into a Maſs for Troches.

Trochisci Restringentes.

Reſtringent Lozenges.

Take Japan Earth in fine Powder, one Ounce; Gum Tragacanth, three Ounces; Oil of Cinnamon, one Dram; Sugar of Roſes, two Pounds: Make them into a Paſte with Mucilage of Quince-ſeeds made very ſtrong.

Theſe are great Reſtorers of a weak Stomach and Bowels, and ſuch as are ſubject to Indigeſtion, Vomiting, and Fluxes. They may be taken at Diſcretion, and by continu'd Uſe they have been known to recover ſome from Weakneſſes, under which they have been juſt ſinking; and for the Fluor Albus, and other female Complaints, there is not a more pleaſant and effectual Remedy; as, alſo, in old Gleets, where no Malignity remains.

Trochisci de Scilla ad Theriacam. See Scilla.

Trochisci Stomachici.

Stomach Lozenges.

Take *Spaniſh* Angelica-root in fine Powder, one Dram; Oil of Cinnamon, Nutmeg, and Cloves, of each two Drops; Oil of Mint and Wormwood, of each one Drop; fine Sugar, four Ounces: Mucilage of Gum Tragacanth, made with Orange-flower-water, a ſufficient Quantity.

Theſe are good to warm the Stomach, and diſſipate ſuch Flatulencies, which ſometimes communicate their Diſorders a great way further, and ſo are of Service to the Head.

Trochisci de Terra Japonica.

Troches of Japan Earth.

Take of Japan Earth, two Ounces; of white Sugar, ſixteen Ounces; of the Mucilage of Gum Tragacanth made in Plantain-water, a ſufficient Quantity to make them into Troches.

Theſe were not in any Diſpenſatory before, and are not only eaſy to preſerve and take; but, alſo, more effectual to all the Intentions of a Reſtringent, than many others.

Trochisci de Terra Lemnia.

Troches of Lemnian Earth.

Take of Lemnian or Seal'd Earth, of Armenian Bole, Japan Earth, Acacia, Hypocyſtis, Gum Arabic roaſted, Dragon's-blood, roaſted Starch, red Roſes, Anthora, or, in its Defect, red Roſe-ſeeds, Blood-ſtone, red Coral, Amber, Balauſtines, Spodium of Ivory, Purſlane-ſeeds ſomewhat roaſted, Olibanum, calcined Hartſhorn, Cypreſs-nut, and Saffron, of each two Drams; of black Poppy-ſeeds, Gum Tragacanth, and Pearls, of each one Dram and an half; of Opium, one Dram: And make them all up together into Troches, with a ſufficient Quantity of the inſpiſſated Juice of Plantain.

This is deſign'd much for the ſame Purpoſe as the *Trochiſci de Carabe*, and the *Trochiſci Gordonii*, that is, to ſtop Haemorrhages, eſpecially Spitting of Blood.

Trochisci; sive Sief de Thure. See Sief de Thure.

Trochisci e Violis solutivi.

Solutive Troches of Violets.

Take of Violet-flowers moderately dry'd, ſix Drams; of gummy Turpeth, one Ounce and an half; of the Juice of Liquorice, Scammony, and Manna, of each two Drams: To the Violets well beat, put the Manna, the Juice of Liquorice; and add the Turpeth, and Scammony in fine Powder; and when they they are all well mixed together, make them into Troches with a little Syrup of Violets, if it be wanted.

Trochisci de Vipera ad Theriacam.

Troches of Vipers for the Theriaca.

Take of Viper's Fleſh, after the Skin is ſtripped off, the Fat and Entrails being taken out, and without the Head and Tail, eight Ounces; of the fineſt wheaten Bread, or rather Biſcuit, powdered and ſifted, two Ounces: Let them be formed into little Troches, by anointing the Head with Opobalſam, or Oil of Nutmegs by Expreſſion; then dry them upon the Bottom of a Sieve inverted in ſome open Place, where the Air hath Paſſage thro'; and turn them often, till they are thoroughly dry.

TROCHITES. The Name of a Stone ſhaped like a Top (*Trochus*) with which Children play. It is without-ſide of a cineritious Colour, but white within.

TROCHLEA. A kind of cartilaginous Pully, through which the Tendon of one of the Muſcles of the Eye paſſes. See Oculus.

TROCHLEARIS MUSCULUS. That Muſcle of the Eye, whoſe Tendon paſſes thro' the Trochlea. See Oculus.

TROCHOIDES, τροχοειδὴς, from τροχὸς, a Wheel. An Epithet for a Species of a Articulation, when one Bone enters into the Cavity of another, like an *Axis* into the Cavity of a Wheel, as it happens in the Articulation with the firſt and ſecond *Vertebræ* of the Neck.

TROCHOS, τρόχος, from τρέχω, to run, is a Courſe; but, in *Hippocrates*, ſeems to mean a curve or circular Courſe, as oppos'd to a ſtrait one, which he calls *Dromos*, δρόμος. Thus, *Lib. de Inſomn.* we read, δεῖ δὲ ἀμφοτέρως τὰς ἀνίστασίας ποιεῖσθαι, καὶ τοῖσι δρόμοισι τοῖσι τε καμπτοῖσι χρῆσθαι· "Revulſions muſt be made both Ways, and Running muſt be "uſed both ſtrait forwards, and in curve or circular Lines." In the ſame Treatiſe, he adviſes to uſe τοῖσι τρόχοισι ὀξέσι, "ſwift, circular Courſes, or Running at the Ring," which is repeated in the ſame Book. In *Lib.* 1. περὶ διαίτης, we read δρόμους ὀξεῖς καὶ καμπτῆρας, "ſwift and wheeling Races;" and *Lib.* 2. he ſeems to ſet τὰς δρόμους μακρὰς, "long Courſes," and καμπτῆρας τοῖς τρόχοις, "crooked with or after the manner of the *Tro*-"*chus*," in Oppoſition. Τρόχοι, in *Galen*'s Exegeſis, are expounded by δρόμοι (*Dromoi*) ſtrait Races; in which Senſe the Word ſeems to be uſed, *Lib.* 2. & 3. *de Diæta.*

TROCHUS is the Name of a Shell-fiſh, reſembling in Shape a Top; which is alcaline and abſorbent, like other Sea-ſhells.

TROCTOS, τρωκτὸς, from τρώγω, to eat, is the ſame as τρώξιμος (*troximus*) eatable, eſculent: But the Word is moſt commonly apply'd to ſuch Foods as are eaten crude; for Inſtance, ſuch as are eaten in Sallads, and ſerv'd up in ſecond Courſes, as dry'd Grapes, Figs, and the like, and, alſo, to *Tragemata*. *Galen*, in his Exegeſis, expounds τρωκτὰ by ὠμὰ ἐσθιόμενα, "eaten raw."

TROGLE, τρώγλη, is a Cavern or Cavity made by Eroſion. *Heſychius* expounds τρῶγλαι by τρύπαι, (*Trupæ*) Perforations, and τρῶγαι by τρῶγλαι, Holes eaten. In *Moſchion*, *Cap.* 126. the Inciſures made by Leeches are called τρῶγλαι. *Hippocrates*, *Lib. de Carn.* calls the Paſſages, Perforations, or any other ſort of Cavity, containing Humidities, *Troglæ*, τρῶγλαι, where he ſays, τὸ δὲ κοιλῶδες τρῶγλαι ἐγὲ γνοῦσι, ἐν δὲ τῇσι τρώγλῃσι ταύτῃσιν τὸ ὑγρὸν, ὥσπερ καὶ ἐν τῇσι φλεψὶν τῇσι μεγάλῃσιν· "The glutinous Subſtance paſſed into Perforations, in which "Perforations is contained an Humid, as there is in the large "Veins."

TROGLODYTES, τρωγλοδύτης. The Wren is call'd *Paſſer Troglodytes*. See Passer.

TROGLODYTICA MYRRHA. The beſt Species of Myrrh; ſo call'd from the Country where it was produc'd.

TROLLIUS FLOS. A Name for the *Helleboro-ranunculus*; *flore luteo globoſo.*

TRONOS, or TRONOSSA. The choiceſt Species of *Manna. Paracelſus. Rulandus.*

TROPHIODES, τροφιῶδες, in *Galen*'s Exegeſis, is expounded by ἔχον ἐμφερόμενά τινα πεπυκνὰ, "containing ſome Matters of "a compact Subſtance," carry'd off (in the Urine); for the Word is ſpoken of the Urine, 7 *Epid.* in a Paſſage to which *Galen* had certainly a Regard in his Expoſition, where it is ſaid ἐκλαῖν ὕρησιν ἄῤῥον τηλὸ τροφιῶδες, "on the ſixth Day ſhe "made

" made Water freely and plentifully with ſomething of a com-
" pact Subſtance," which floated in it.) Here by τροφιῶδες, and ὕρησε τροφιῶδεα, and ὕρα τροφιώδεα in the ſame Book, is to be underſtood Urine, which has ſwimming in it ſomething of a denſe and compact Subſtance, or ſome thick and condenſed Corpuſcles like an Enæorema, [ſee that Word] compacted into a globular kind of Form, as is obſerv'd under a great Redundance of Crudities, and in Fevers of a bad Kind; and indicates a great internal Burning, and vehement Exagitation of Nature, with an extraordinary Mixture of Flatuoſities, of which we have frequent Inſtances in the *Epidemics*. We meet with τροφιῶδες ὕδωρ, alſo, *Coac.* 578. but the Reading ſeems to be corrupted, if we conſult the *Prorrhetica*. And *Coac.* 604. we read of τροφιώδεα διαχωρήματα, by which muſt be underſtood, Excretions of a denſe and concreted Subſtance. But the Reading appears to me very ſuſpicious; and it appears from the *Prorrhetica*, that we are to read ἐκ τροφωδέων (not τροφιωδέων) ὑπόστασις ὑποπέλιος, " a ſublivid Sediment of Excretions at-
" tended with Gripings;" which almoſt conſtantly accompanies liquid Stools, eſpecially if it be conſidered, that the ſublivid and muddy Sentiment proceeds from a great internal Heat, and a kind of Torrefaction, as *Galen* obſerves in *Prorrhet.* 156. and indicates a Diſtemperature of the Liver, and that ſuch Excretions are uſually attended with Gripes.

Τροφιῶδες is reckon'd by *Galen* one of thoſe Words which are obſcure, and but ſeldom uſed; and he derives it from τρέφομαι (*trephomai*) which he expounds by πήγνυμαι, to be compacted. *Euſtathius* expounds τρέφεσθαι by πήγνυσθαι, and *Heſychius* explains τρέφειν by πηγνῦναι, and τρέφεσθαι ὁμοίως, in like manner, that is, by πήγνυσθαι. *Galen*, alſo, *Com.* 3. in *Prorrhet*, where he explains τροφώδεα ὕδατα, to be the ſame as in his *Exegeſis* he makes τροφιώδεα to be, expounds διατρέφεσθαι by πήγνυσθαι, and tells us, that in *Homer* διατρέφεσθαι κυκλοδὸν ſignifies περιπήγνυσθαι, where διατρέφεσθαι and περιτρέφεσθαι ſeem to be put for διαθρέφεσθαι and περιθρέφεσθαι, as in *Homer*, *Odyſſ.* ξ. where we read χὴ σακέεσσι περιτρέφετο κρύσαλλος, *Heſychius* reads περιθρέφετο, and expounds it by περιεπήσσετο. And in *Iliad.* ε. μάλα δ' ὦκα περιτρέφεται κυκόωντι, *Herodian* reads περιθρέφεται, which Reading is approv'd by *Euſtathius*. *Erotian* ſays that τρέφαι with the *Attics* ſignifies πῆξαι, when he expounds τετραμμένον by πεπηγότα, and obſerves further, that τυρὰλις is πεπηγὼς τύρος, and derived from τρέπω, but *Heſychius* better derives it from τρέφω, and ſays that it ſignifies τὸ πεπηγμένον. The ſame Author expounds τραφῆσθαι by παχύνεσθαι, to be incraſſated.

TROPHOS, τροφός. The Name of a Sort of Liniment mention'd by *Paulus Ægineta*, L. 4. C. 40.

TROPICUS MORBUS. A Chronical Diſeaſe.

TROXIMOS, τρώξιμος. The ſame as TROCTOS.

TRUNCULI. The Extremities of Animals, as the Feet, Ears, and Head. Pettitoes.

TRUTTA. Offic. Schrod. 5. 334. Bellon. de Aquat. 181. Mer. Pin. 188. *Trutta fluviatilis*. Aldrov. de Piſc. 585. Salv. de Aquat. 96. Geſn. de Aquat. 1005. Rondel. de Piſc. 2. 169. Jonſ de Piſc. 85. Raii Ichth. 199. Ejuſd. Synop. Piſc. 65. THE TROUT.

The Trout is a Fiſh of excellent Taſte, and is covered with ſmall Scales, uſually ſtreaked with red. There are ſeveral Species of this Fiſh, which live in various Places, and differ in Colour and Size. Some are found in deep and rapid Rivers, others in Lakes; ſome are of a blackiſh Colour, others reddiſh, and rather of a gold Colour. There is another Sort, which is larger than the reſt, named the Salmon-trout, becauſe it reſembles a Salmon, but is not ſo large; it is more valued for the Delicacy of its Taſte, than the other ſorts of Trout.

This Fiſh ſwims with much Agility and Swiftneſs, and is ſaid on hearing Thunder to be ſo aſtoniſhed, as to become immoveable. It feeds upon Worms, Slime, Mud, Inſects, and ſmall Fiſhes, which it purſues with ſo much Eagerneſs, from the Bottom to the Surface of the Water, that it ſometimes throws itſelf into the Boats paſſing near it.

Trouts, beſides being well taſted, produce good Juice, becauſe they are always in Motion, feed upon good Food, and uſually ſwim in clear and running Streams: Thus they acquire leſs groſs and viſcous Humours, eat ſhot, and are eaſily digeſted; but they ſoon putrefy and corrupt, and therefore ſhould be eaten without Delay, after they are brought out of the Water.

The Trout contains much Oil, volatile Salt, and Phlegm; and agrees with any Age and Conſtitution. In Summer it is moſt delicious, but in Winter it is deprived of almoſt all the Excellency of its Taſte. It may be boiled, fried, roaſted, or baked; and ſome ſalt it for Exportation.

There is another kind of Trout, ſomewhat different from thoſe already mentioned, which is called in *Latin Thymallus*, *a Thymi Odore*, becauſe it ſmells like Thyme. It is delicious Food, eaſy of Digeſtion, has good Juice, and ſo wholſome, that in ſome Places they allow ſick Perſons to eat it. Its Shape reſembles that of the common Trout, and it, alſo, lives in clear and running Waters: It feeds upon the ſame Food, and in ſome Countries is more valued for the Goodneſs of its Taſte than the other ſorts. Its Fat is good to remove Prints of the Small Pox, Deafneſs, Noiſes of the Ears, Specks, and Catarrhs of the Eyes.

The Fat of the firſt-mentioned Species is of a lenifying and diſſolving Nature; good for the Piles, and other Diſtempers of the *Anus*, Ulcers in the Breaſt, and Fiſſures in the Nipples. *Lamery on Foods.*

TRYBION, τρυβίον, in *Hippocrates* περὶ γυναικ. φύσ. is by Tranſlators render'd *Glandula*, a Peſſary; but the Place, τρυβίον ποιήσας, " having made of them a Peſſary," ſeems ſuſpicious and corrupt, as appears from the Aſterisk in the *Aſulan* Manuſcript, and for τρυβίον ποιήσας we are to read, in my Opinion, τρίβων λεῖον ποιήσας, " triturating and levigating," that is, the Medicines before-mention'd, which are to be involv'd in fine Wooll for a Peſſary. *Foeſius.*

TRYBLION, τρυβλίον, in *Hippocrates*, *Lib.* περὶ ἀφόρων, is the Kettle, Diſh, or Can, in which the Matter for Suffumigation is placed. In ſome Authors it is the ſame as ὀξύβαφον, *Oxybaphon*, or *Acetabulum*. The Word is often uſed by *Hippocrates*, *Lib.* περὶ τῶν ἐντὸς παθῶν. In the ſpurious Additions to *Lib.* 1. περὶ γυναικ. we read ἁλὸς τρυβλίον πλεῖον, which the Tranſlators render an Hemina, or Acetabulum, full of Salt. *Foeſius.*

TRYCHOS, τρύχος, is a worn and ragged Piece of Cloth, called, alſo, ῥάκος, a Rag. In *Ariſtoph. Acharn.* a Perſon calls a Fragment of Tragedy, τὰ ῥάκια of Tragedy, and the ῥάκιον of the old Drama, τὰ ποῖα τρύχη, " a kind of *Tryche*;" where the Scholiaſt obſerves, that τρύχη is the Tragedian Word for ῥάκη, *Rhache*, " Rags." The Perſon here repreſented intends to laugh and and jeſt at the worn and threadbare Habits of the old Comedy, and the ragged Dreſſes of the modern Tragedy, in which *Euripides* introduced his Heroes in poor, mean, and pitiful Habits.

Τρύχος ἐθουίου μακρὸν, in *Theophraſt. Hiſt. Plant. Lib.* 3. *Cap.* 9. is the long Panicle of the *Ægilops*, and is the ſame with thoſe Subſtances which *Pliny*, *Lib.* 18. calls *Panos arentes muſcoſo villo canos*, " dry'd Panicles, appearing hoary with their
" moſſy Capillaments;" for whatever is of a round oblong Figure is called by *Pliny*, *Paniculus* and *Panus*, as well as what hangs down from the Boughs of the *Picea* and *Rubus*.

Τρυχίον is a Diminutive of τρύχος, and ſignifies the ſame as ῥάκιον, " a ſmall Rag;" and is frequently uſed by *Hippocrates de Morb. Mulier.* and is ſometimes expreſſed by ῥάκιον and ὀθονίον, all ſignifying a thin linen Rag, fit for wrapping up Medicines in the Form of a Peſſus.

TRYGE, τρύγη, is expounded in *Heſychius*, ὁ πυρὸς, χὴ ἡ κριθὴ, χὴ πᾶς ἄλλος καρπὸς, χὴ ποία βοτάνη, " Wheat or Barley,
" and all other ſorts of Fruit, and a kind of Herb." *Euſtathius* expounds τρυγὴ by ὁ δημόσιος καρπὸς, " Corn or Grain for
" Bread." Hence τρυγαβόλιον ſignifies a Granary, or Repoſitory for Corn.

TRYGEPHANIOS, τρυγοφάνιος οἶνος. A kind of ſecondary Wine, made by expreſſing the Husks of Grapes, after the firſt Juice is preſs'd out.

TRYGIS, τρύγις, in *Lib.* 2. περὶ διαίτης, is the *Tragus*, or *Olyra*, tho' *Calvus* renders it *Semen*.

TRYGODES. An Epithet for a Species of *Collyria* mention'd by *Galen. de C. M. S. Loc. Lib.* 4.

TRYPANON, τρύπανον. The ſame as TEREBELLA.

TRYPHEROS, τρυφερὸς, tender, ſoft, delicate, or mild. This is the Name of ſeveral Medicines deſcrib'd by medicinal Writers. Thus *Scribonius Largus*, N° 230. mentions two mild Cauteries by the Names of *Tryphera*, or *Triphera*. *Galen* deſcribes a *Collyrium*, and a Paſtil or Troche, with this Epithet; the firſt in *L.* 4. *Cap.* 7. *de C. M. S. L.* the laſt in *L.* 7. *C.* 4. of the ſame Work.

In the *Auguſtan* Diſpenſatory, I find the following Medicines deſcrib'd under the Title of *Tryphera*.

TRYPHERA PERSICA MESUÆ, which is thus prepared.

Take of the Juice of the beſt Endive three Pints; of the Juices of Smallage and Hops, each two Pints; of the Juice of Nightſhade, nine Ounces; and of the Juice of Barberries, three Ounces: Pour all theſe upon recent, or dried, Violets and Roſes, of each three Drams; of Sena-leaves, two Ounces; of Agaric, one Ounce; of damask Prunes, fifty; of Dodder, half an Ounce; of the Citrine, Chebule and Indian Myrobalans, rubbed with recently expreſſed Oil of ſweet Almonds, each two Ounces; and of Indian Spike, three Drams: Let them boil on a ſlow Fire, till only two Pints of the Liquor are left: Then add of Dodder of Thyme, forty Drams: Then boil all together, and take the Veſſel off the Fire; ſtrain the Liquor, and in one Half of it, diſſolve, of Tamarinds, three Ounces; of Manna, an Ounce and an half; of the Pulp of Caſſia, four Ounces; and of the Conſerve of Violets, one Pound: Strain the Whole, and cleanſe it from Seeds and Sordes. To the other Half of the ſtrained Liquor, add, of the fineſt white Sugar, three Pounds; and of Wine-vinegar, one Pint; boil over a gentle Fire, and pour it upon that which was diſſolved in the Juices; mix all together, and boil to the Conſiſtence of Honey; Then ſprinkle into the Preparation the following Ingredients, reduced

reduced to Powder; of the beſt Rhubarb, two Ounces; of *Citrine* Myrobalans, an Ounce and an half; of Chebule, and *Indian* Myrobalans, each an Ounce; of the Belleric, and Emblic Myrobalans, each half an Ounce; of the Seeds of Fumitory, the Trochiſci Diarhodon, Mace, Maſtich, Cubebs, Spodium of Ivory, and yellow Sanders, each two Drams; of the Kernels of the Four greater cold Seeds, each two Drams and an half; of Aniſeeds, half an Ounce; and of *Indian* Spike, two Drams. Make into an Electuary, in the Form of an Opiate.

This Medicine is ſaid to be good in acute Fevers, in an hot Intemperature of the Stomach and Liver, and in all Diſorders ariſeing from a preternatural Heat of the Humours. It extinguiſhes Thirſt; cures a Jaundice accompanied with Heat; diſcuſſes thoſe Suffuſions which ariſe from bilious Vapours, and are offenſive to the Sight. It, alſo, purifies the Blood; for which Reaſon it is, by *George Agricola*, and others, highly recommended in peſtilential Fevers, and the Plague.

TRYPHERA MAGNA NICOLAI is thus prepared.

Take of Opium, two Drams; of Cinnamon, Cloves, Galangals, *Indian* Spike, Zedoary, Ginger, Coſtus, Styrax Calamita, Cyperus, Calamus Aromaticus, Root of *Illyrian* Orris, Hogs Fennel, the Acorus, or greater Galangals, the Bark of Mandrake, Red-roſes, *Celtic* Spikenard, Pepper, Aniſe, Smallage, Parſley, Fennel, Carrot, the Sinonus, Henbane, Hyſſop, the Seeds of Ocymum, each one Dram, and of the pureſt Honey, ten Ounces and an half.

Theſe Preparations are called *Tripheræ*, becauſe they enliven the Colour of the Body, render the Breath ſweet, and have a beautiful Appearance. They correct Putrefactions of the Humours, reſtore a due Succulence to the Body, and, like other Coſmetics, contribute much to augment Beauty. And this Preparation is in a peculiar Manner efficacious in Diſorders of Women, ariſing from Coldneſs of Conſtitution. It may be, alſo, injected into the Uterus with Oil of Nutmegs.

TRIPHERA MINOR PHÆNONIS MESUÆ is thus prepared:

Take of Chebule, Belleric, *Indian* and Emblic Myrobalans, and of Nutmegs, each five Drams; of the Seeds of Water-creſſes, of Aſarabacca, *Perſian*, or *Cretan* Origanum, Pepper, Frankincence, Biſhops-weed, Ginger, the Fruit, or Leaves of the Tamariſk, *Indian* Spikenard, Camels Hay, each four Drams; and of the Scorie of Iron or Steel, macerated for five Days in Vinegar, twenty Drams. Let the Myrobalans be moderately roaſted with recent freſh Butter, and let the other Ingredients be covered with Oil of ſweet Almonds: Then add of Muſk, one Dram; and of the fineſt Honey, two Pounds, nine Ounces, and ſix Drams: Make into an Electuary.

This Preparation corroborates the Stomach, Liver, Kidneys, and Bladder; checks immoderate Diſcharges of the Hæmorhoids and Menſes; corrects a Corruption of the Humours, Crudities, and Putrefactions in the Stomach; renders the Colour good, and the Countenance beautiful.

TRIPHERA SARACENICA MESUÆ is prepared in the following Manner.

Take of the five Kinds of Myrobalans, each five Drams; of Cinnamon, the three Species of Pepper, Secacul or Eryngo, *Indian* Leaf, or Mace, *Indian* Spike, both Species of the Cardamoms, Caſſia Lignea, *Indian* Scitaragia, or Dittander, Cyperus, Smallage, Seeds of the Aſh-tree, Cloves, both Species of the Ben, and of Ginger, each two Drams; of Nutmeg, Mace, and excorticated Seſamum, each three Drams; of both Species of Almonds, each five Drams; of Aloes-wood, Rhubarb, Rue, Fennel-ſeeds, and Maſtich, each two Drams; of the Ocymus Caryophyllatus, dried *Mint*, and *Cretan* Origanum, each half a Dram.

Let the Myrobalans, when triturated, be fried with recent freſh Butter, obtained from Cows Milk; and the other Ingredients with Oil of ſweet Almonds; and with a third Part of fine Honey, make into an Electuary. This Preparation, by its Heat, is beneficial to the Liver; aſſiſts Digeſtion; diſſipates Flatulencies; removes putrid Matter lodged in the Stomach, or any other of the Viſcera. It, alſo, enlivens the Colour, ſweetens the Breath, removes Wearineſs, preſerves Health, when preſent; and prevents the Generation of Diſeaſes.

TRYPHONIS EMPLASTRUM. *Scribonius Largus* mentions ſeveral Plaiſters under this Title. N° 203, 205, and 210.

TRYPHOS, τρύφος, in *Hippocrates*, ſignifies a Piece, or Fragment. Thus, *Lib.* 2. (περὶ γυναικ.) τρύφος ἀμφορίνος διαφαρὶς is a red-hot Sheard, or Fragment of a Pot, in which the Matter for Suffumigation is laid. Inſtead of this, *Lib.* 1. περὶ γυναικ. we find, ὀστράκινον χυτρίδιον καινὸν διάπυρον, a new earthen Pot, heated red-hot, directed for that Purpoſe.

TRYX, Τρυξ, is the Lees of Wine or Oil; the Lees of which laſt are, alſo, called ἀμόργη, *Amorga*. *Hippocrates*, *Lib.* 1. περὶ γυναικ. adviſes dry *Tryx* of old Wine, in Peſſaries, and Coliutions of the Uterus.

Τρυξ, 5 *Epid.* ſignifies, alſo, black Bile, which is, as it were, the Lees of the Blood; and 7 *Epid.* and *Coac.* we read Τρυγώδης πτύσις, feculent Spitting.

TSHINKA. Popoua *Indis*. Piſon. *Caryophyllus Regius*. Worm. *Caryophyllus ramoſus, vel dentatus*. Jo. Bod. a Stapel. *Spicatus*.

The *Dutch* call this the Royal Caryophyllus, becauſe it is valued by the petty Kings and Nobles of the *Molucca* Iſlands, even to Superſtition; not ſo much for its Taſte and Fragrance, though it excels others even in theſe reſpects, as on account of its ſingular Form, and extraordinary Rarity; for they ſay, that there are but two Trees of it to be found, and thoſe in the Iſland of *Makian*. One of theſe Trees is bigger than the other, but both of them like the other caryophylliferous Trees, except in Talneſs.

I am of Opinion, that theſe Trees are not a different Species, but belong to the Order of monſtrous Vegetables; and that their Fruit is no other than the common aromatic Caryophyllus, divided into more Horns, which grow out by degrees, but want of the floriferous round Cup. It is no Wonder, therefore, that the Species is extinct. *Rai Hiſt. Plant.*

TSJAKELA. H. M. *Ficus Malabarica, ſemel in Anno fructifera, Fructu minimo*. A Species of *Ficus*, or Fig-tree, growing in *Malabar*. Of the Bark of the Tree the Natives make Strings for their Bows, and of the ſame prepare a red Colour, for dying what they call *Panos de Cambaca*, or *Cambayan* Cloths.

The Virtues are the ſame with thoſe of the

Atty-Alu, or *Ficus Malabarenſis Folio oblongo acuminato; Fructu vulgari æmulo*. D. Syen. *Annot. in* H. M. The Fruit, like the Fig, is full of ſmall, thin, oblong, Grains, in numerous Series, and, when ripe, Ants are found in them. The Natives feed on this Fruit, but not on the Fruit of the other Species.

The Decoction of the Root, or the Juice which flows from an Inciſion made in the Tree, and received in a Veſſel ſet under it, ſerves to purify the Blood, to rectify Diſorders of the Liver, and to heal Chops and Fiſſures of the Hands, Mouth, and other Parts: The Bark in Decoction ſerves for the ſame Purpoſes, and, being bruiſed, is ſucceſsfully applied to Ulcers, and to the Part affected with the *Morbus Sacer*, called by the *Portugueſe*, *Cobrella*. The Fruit binds the Belly, and is good to correct Phlegm, and the Diſtemperature of the Humours.

We ſhall here take notice of another Species of *Indian* Fig-tree, which, as well as the former, was omitted under the Article *Ficus*, to which it was referred; and that is the

Are-Alu. H. M. *Ficus Malabarenſis; Folio cuſpidato; Fructu rotundo; parvo, gemino, D. Sien.* This is a tall Tree with thick and ſhady Leaves, and growing in ſandy and rocky Places, like the *Itty-Alu*, and has a Root like the *Per-Alu*. [See theſe *Alu's* below]. The Leaves are inſpiſſated, and not ſo thick as thoſe of the *Itty-Alu*, the Fruit grows in Pairs, cloſe together, at the Origin of the Leaves; and are ſmall, round, with a ſmall Umbilicus in the Vertex, but containing no Ants, but numerous Grains, of the Size of thoſe of the *Atti-Alu*, and incloſing a blackiſh minute Seed. The reſt of the *Alu's* mentioned by *Ray* are,

Itty-Alu, H. M. *Ficus Malabarenſis; Folio denſiuſculo nitente; Fructu parvo rotundo coronato*. This is a tall Tree, but leſs than the other Species of *Alu*. It is propagated by Fibres ſhooting downwards from the Branches. The Leaves have an aſtringent and bitteriſh Taſte. The Fruit grows either ſingle, or two or three together, and that either out of the Boſoms of the Leaves, or here-and-there out of the Boughs, and is ſmall, round, with an eminent Umbilicus on the Vertex, of a yellow Colour when ripe. The Grains are like thoſe of the *Atty-Alu*.

An Infuſion of the bruiſed Bark in Milk, being firſt ſtrained, is exhibited for the Vertigo. A Decoction of the Leaves in Oil is ſerviceable in the Cure of Ulcers, the Body being thoroughly anointed with it.

Itti-Are-Alou, H. M. *Ficus Malabarica, Folio mali cotonei; Fructu exiguo plano rotundo ſanguineo. D. Commelin. Arbore de Rais minor Luſitanis*. This is a tall Tree, running into a Multitude of Branches, which, after the Tree has lived forty or fifty Years, ſhoot forth a ſort of ſlender Fibres, or Filaments, and thoſe ſingle, downwards, which, taking hold of the Earth, there take Root, and grow up into new Trees, which again propagate themſelves in their Seaſon, by other Fibres ſhooting downwards from their Branches, and ſo ſucceſſively *ad infinitum*, ſo that ſometimes one Tree has been found to occupy the Space of an *Italian* Mile in Compaſs, by this ſucceſſive Propagation of its Shoots; and it has been difficult to know the Original, or firſt Parents, but only by the Thickneſs of its Trunk, which ſometimes can ſcarce be fathomed by three Men; and not only the lower Branches ſend out Fibres, but the higheſt do the ſame, by which means one Tree makes a very thick Wood, which after remains for ſeveral Ages. The Inhabitants make themſelves Paſſages under theſe Trees, and cut them into Arbours, and cloſe and ſhady Walks, well defended from all Heat of the Sun, by the cloſe Contexture and Luxuriancy of the Branches; and ſo extenſive, that a thouſand Perſons may repoſe themſelves under the Shade of one ſuch Tree. The Leaves

are like those of the *Itty-Alu*, but less; the Fruit is small, flat, oblong, first green, then of a sanguineous Colour, both within and without, and full of Grains, like the common Fig, and sweet like that, but not so savoury; so that they are rather Food for Birds than Men.

It grows in all Parts of *Malabar*, and is green and fructiferous throughout the Year. Of the Bark, Leaves, and Root, boiled in Oil, is prepared a vulnerary Balsam: Of the Bark, boiled in Butter-milk, is prepared a Collution for the Mouth, which absterges Aphthæ, heals flaccid and corroded Gums, and fastens loose Teeth. The Tree is not much different from the preceding, except in Bigness.

Tsjerou-meer-alou. This is less and lower than the preceding, but grows and propagates itself in the same manner, and the Leaves and Fruit are much like those of the other, only less; and the Virtues are the same as those of the preceding, except that of the Root boiled in Water, with Lime and Turmeric, is prepared a Bath for the Epilepsy, and the Leprosy.

Peralu. H. M. *Ficus Malabarensis*; *Folio crassiusculo majori*; *Fructu gemino intense rubente.* D. Syen.

The Liquor of the Filaments, which hang down from the Boughs, drank only in Water, or given in Decoction, mitigates the Heat of Fevers, and purifies the Liver and Blood. The Bark of the Tree, bruised, and applied to the Part affected, cures the *Morbus Sacer.*

Atty-meer-Alou, or *Alu.* H. M.

This is a Tree of a vast Bigness, with a thick Trunck; whence it shoots some slender and single Fibres downwards, which, adhereing to the Tree, renders it vastly thick: By those Fibres taking Root in the Ground this Tree is propagated.

The Tree takes its Beginning from the Trunks of some Trees, or from Rocks, or the Gaps and Fissures of some old Walls, from whence it comes forth like a *Convolvulus*; after this the Root and Trunk shoot forth some thin Filaments, by which the Trunk is considerably increased. By the same Filaments it is settled in the Earth, and propagated far and wide, while the Tree, whence it had its Original, dies. This is the largest of all the Trees hitherto discovered in the *Indies*, and lives some Centuries. In *Kandanate*, a Province of *Cochin*, near the Temple of *Beykan*, is a Tree of this Kind, which is fifty Geometrical Feet in Circumference, and is said by the Natives to be of two thousand Years standing.

The Juice of the Leaves cures burning Fevers, and the Fruit stops all manner of Fluxes of the Belly.

Hondir-Alu is a tall Tree, and propagates itself in the same Manner as the preceding. The expressed Juice of the tender Leaves is an excellent Remedy for corroded Gums, and other Affections of the Mouth, being used as a Collution. Of the same, prepared with fresh Butter, is prepared a Digestive, which is useful in cleansing and consolidating Ulcers. Of the Roots and Leaves, boiled together in Water, is prepared a Bath, which is said to be effectual towards curing the Epilepsy and Leprosy. *Raii Hist. Plant.*

TSJAMBOU. See JAMBOS.

TSIAPANGAM. See LIGNUM CAMPESCANUM.

TSIELA. *Ficus Malabarica*; *Fructu Ribesii Forma & Magnitudine*; is a large Tree, seven Feet in Height, with a thick Trunk, eighty Feet in Compass, and numerous Branches spreading circularly. The Fruit adheres to the Boughs among the Leaves, being without Pedicles, in Shape and Size resembling Currants, full of small, reddish Grains, as all the Fruits of the *Alu* and *Teregam*, and without Taste or Smell.

The Bark of the Root, boiled with long Pepper in common Water, cures an inveterate Cough, and other pulmonic Disorders. The expressed lacteous Juice of the Root and Fruit is an effectual Remedy in Diseases of the Eyes. *Raii Hist. Plant.*

TSJEM-TANI. *Myxa pyriformis Officulo trispermo.* This is a Tree of vast Bigness, growing in *Malabar*.

The Bark of the Tree is heating, incites viscous and pituitous Humours, attenuates, strengthens the weakened Viscera, and purges the Water from Hydropics. The same, with the Pulp of the Fruit, reduced to Powder and exhibited, cures an intermittent Fever; the Kernels of the Fruit, if eaten, loosen the Belly. *Raii Hist. Plant.*

TSJERIAM-COTTAM. H. M. *Frutex Indicus Bacciferus*; *Fructu racemoso, cuspidato, Ribium simili, monopyreno.* It is an evergreen Shrub of *Malabar*, whose Fruit is not much unlike our Currants.

Of the Leaves boiled in Water is made a Collution for the Mouth, which cures loose and tumid Gums; and of the Bark boiled in Whey, with the Seeds of Cumin, is prepared a Gargarism, which is said to be a potent Remedy for the Aphthæ. *Raii Hist. Plant.*

TSJEROM-KARA, *Malabarensibus.* H. M. *Baccifera Indica Floseulis ad Folorum Exodum confertis, Fructu dicocco.* It is a little low Tree, or rather Shrub, seven or eight Feet high, growing in *Malabar*, with a Trunk of a moderate Thickness, and a Multitude of small ash-coloured Branches, armed with rigid Spines, which are circularly disposed. The Root is reddish, sweet-scented, and bitter; the Flowers are small, greenish, scentless, and are seated in a small green Calyx, divided into five acuminated Lobes, and are succeeded by flat, round, dicoccous Berries, crowned with a broad Umbilicus at Top, and full of a green, humid, and bitter Pulp, within which are lodged two oblong Seeds, placed at Distance from each other.

Of the Leaves, boiled in Water, is prepared a Collution for the Mouth, and for the Aphthæ. The Decoction of the bruised Root in Water opens Obstructions of the Liver, purges the Blood, and exhilarates the Patient. *Raii Hist. Plant.*

TSJEROE-KATOU, *seu Cheru.* H. M. *Prunifera Malabarica*; *Fructu racemosa parvo, acric Succo tinctorio.* This is a very tall and beautiful Tree, with a thick Trunk, and numerous Branches, spreading far and wide. The Wood is whitish, close, covered with a dusky, and lanuginous Bark, which wounded, discharges a reddish, glutinous, strong-scented, very acrid, and caustic Tear, which grows black with long standing in the Sun. The Root is whitish, covered with a dusky Bark, scentless, and of an unctuous, acrimonious, and caustic Taste; as are, also, the Leaves, which emit a reddish, acrimonious, and burning Juice, which exulcerates the Skin, like the Ranunculus. The Flowers are of a beautiful, white, tender, sweet-scented, hot and acrid Taste, and pentapetalous. To the Flowers succeed small, round, oblong Fruit, exactly resembling those large cerulean Grapes, which the *Greeks* call βύμασοι (*Bumasti*) both in Size and Shape: They are first green; a little before Maturity, glaucous and lanuginous; but, as they ripen, become of an atro-cerulean Colour, and glabrous, and full of a brownish, succulent, glutinous, acrid, and caustic Pulp, inclosing an oblong Stone, containing a whitish, unctuous, bitterish, and sub-acrid Kernel, in Shape something like the Kernel of a Filberd.

It grows in all Parts of *Malabar*, and is usually cultivated in Fields where Rice or Corn is sown, in order to keep off the Birds, by its deleterious Quality.

The Tear of the Cortex, or the acrid, and glutinous Juice of the Fruit, with a Mixture of Lime, are used by the Painters in staining their Cottons with an indelible Colour. The Decoction of the Fruit, drank, cures the Itch, Leprosy, Pain of the Head from a cold Cause, the Vertigo, tormenting Pain of the Colic, and other Disorders, proceeding from viscid, pituitous, and flatulent Humours. The expressed Juice of the Fruits, and the Bark of the Tree, by Application, cures the Tooth-ach, and opens cold Tumors, by corroding the Skin, and raising a Blister.

This Tree is very strong Poison to some among the *Indians*, who swell, in every Part of their Body, at a strange Rate, from but a slight Toutch of it; but this Symptom is immediately mitigated by taking Milk, Butter, or Oil. *Raii Hist. Plant.*

TSJEROE-POEAM. H. M. *Baccifera Malab. racemosa, tripetala, Fructu oblongo tricocco, Calyce excepto.* This is a small low Tree, with a slender, whitish Trunk, cover'd with a blackish Bark, green on the Inside, and furnished with many geniculated Branches. The Root is yellowish, cover'd with a reddish Bark, and of an unpleasant Smell and Taste, as are, also, the Leaves, which are oblong-round, acuminated, smooth, of a Dark-green, and shining on the upper Face, and greenish and lanuginous beneath, and tripetalous: From whence arises a slender, oblong Pointal, of a green Colour inclining to yellow, and with a round Apex. The Flowers are succeeded by oblong-round Berries, tricoccous, green, lodged in Calyces, and containing Seeds of a whitish-green Colour, having their Cells separated by membranaceous Pellicles.

Of the Flowers, Fruit, and Bark, boiled in Oil, a Liniment is prepared, which, apply'd to the Part, is said to cure the Headach. The fresh Leaves, bruised, and apply'd to the Place affected with an Erysipelas, are reported to remove the Disorder. *Raii Hist. Plant.*

TSJOCATTI. H. M. *Frutex bacciser Malab. Fructu calyculato, tetracocco, umbellato.* It is a little low Tree, about twelve Feet high, with a slender Trunk, and a Multitude of small ligneous Boughs. The Wood is whitish, cover'd with a reddish Bark. The Root is whitish, bitter, and aromatic. The Leaves are oblong-round, acuminated, slightly crenated, thick, dense, glabrous, of a blackish Green on the upper Face, and greenish beneath. The Flowers are yellowish, scentless, and are disposed on the Top of the Boughs in the Form of an Umbella. The Berries are tetracoccous, and sometimes pentacoccous, first greenish, but when ripe, red and shining, and inhering in a blackish red Calyx; their Taste is an acid Bitter; and they contain, for the most part four whitish Kidney-shaped Seeds of a bitter-sweet Taste.

The Decoction of the Leaves in Whey is very much commended for the Cardialgia. The same boiled in common Water with the Flowers and Fruit, and the Mouth washed therewith, cures Erosions of the Gums, and fastens loose Teeth. Of the Root boiled with Cumin-seed in Milk, is made a Drink, which is a potent Anti-emetic; and the same, worn as an Amulet upon the Belly, is said to mitigate the Pain of the Colic. *Raii Hist. Plant.*

TUBA. A Trumpet. Acoustic Tubes are Instruments contriv'd to assist Hearing. See AURIS.

TUBÆ FALLOPIANÆ. The Fallopian Tubes, Appendages of the Uterus thus call'd. See GENERATIO and UTERUS.

TUBEL. The same as *Squamæ Æris*, Scales of Copper. *Rulandus.*

TUBELECH. The ſame as DUELECH.

TUBERA. Fungi, or Muſhrooms. Round Tumors on the Body, are, alſo, thus call'd,

TUBERARIA MAJOR, Myconi. J. B. The Name of a Species of *Ciſtus*, call'd by *Caſpar Bauhine Ciſtus, Folio Plantaginis.*

TUBERCULUM. A Tubercle, or ſmall Tumor. See NÆVUS and TUMOR.

For Tubercles in the Auditory Paſſage, ſee AURIS.

For Tubercles on the Eye-lids and Eyes, ſee OCULUS.

For Tubercles of the *Vagina*, ſee VAGINA.

TUBEROSA. The Tuberoſe.

TUBULARIA.

The Characters are;

It reſembles a *Madrepora*, conſiſting of a Multitude of ſmall Tubes elegantly compacted together.

Boerhaave mentions but one Sort of *Tubularia*; which is,

Tubularia; purpurea. *T. Coralliis affinis; Alcyonium; fiſtuloſum, rubrum.* J. B. 3. 808. *Boerh. Ind. alt. Plant.*

There are no Virtues aſcrib'd to this Lithophyte.

TUBULI *Arundinacei ad Aſthma.* C. B. *Tabaci Haytinorum, quos Mexicani vocant* POCYLT. Fr. Hernandez.

They give the Name of *Tabacos* to thoſe hollow and perforated Fragments of Reeds, which are a Span and half long, and ſmutted on the Outſide with Charcoal, but have their Cavities filled with *Yeli*, that is, Tobacco, Liquid Amber, *Kochicozetl*, and ſometimes other heating Plants and Spices. Theſe being ſet on Fire, at the End which is full, by the other the Fume is attracted and ſwallow'd; by which means, as by a Suffumigation, Sleep is induced, and all Senſe of Labour and Laſſitude is remov'd. By the ſame Remedy are mitigated all kinds of Pain, eſpecially of the Head; Phlegm is expectorated; the Aſthmatic are relieved; and the Stomach is corroborated. But we are to beware, leſt the exceſſive Uſe of theſe Tubuli, or *Tabacos*, ſhould induce an hot Diſtemperature of the Liver, with a Cachexy, and other incurable Diſtempers. *Raii Hiſt. Plant.*

TUBULUS MARINUS. A Name for the ANTALIUM.

TUBUS. A Tube, or Pipe. This Name is apply'd to many Conduits in the Body.

TUCUM. The Name of a Species of Palm, which grows in *Braſil.*

TUINAMTIIBA. A Name for the *Corallodendron; triphyllon; Americanum; ſpinoſum; Flore ruberrimo.*

TULIPA.

The Characters are;

The Flower is liliaceous, hexapetalous, Pitcher-ſhaped, naked, ſingle on the Top of a Stalk, erect, and furniſhed with ſix Stamina, and embracing the Ovary, which becomes an oblong Fruit, full of flat Seeds, lying one on another in a double Row, and furniſhed with a remarkably hairy Tube. The Stalk is ſurrounded by broad Leaves; the Root bulbous, tunicated, with its feſſile Part fibrous.

Boerhaave mentions twelve Sorts of *Tulipa*; which are,

1. Tulipa; præcox; rubra; flavo per oras diſcurrente. *C. B. P.*

2. Tulipa; præcox; alba; varia. *C. B. P.* 59.

3. Tulipa; præcox; lutea; varia. *Cluſ. Hiſt.* 140.

4. Tulipa; præcox; lutea. *C. B. P.* 57. *Tourn. Inſt.* 373. *Boerh. Ind. a.* 2. 138. *Tulipa.* Offic. *Tulipa præcox tota lutea.* Ger. 117. Emac. 138. *Tulipa præcox flava.* J. B. 2. 666. THE TULIP.

It grows in Gardens, and flowers in the Spring; and the Root, which is uſed, is by ſome affirmed to have the ſame medicinal Virtues as the *Battatæ*, or *Paſtinaca latifolia.*

5. Tulipa; præcox; rubra. *C. B. P.* 50.

6. Tulipa; præcox; purpurea. *C. B. P.* 57.

7. Tulipa; præcox; flore Amethyſtino. *T.* 373. *Lilio narciſſus, purpuro-violaceus.* Lob. Ic. 129.

8. Tulipa; præcox; alba. *C. B. P.* 57. *Lilio-narciſſus, niveus, totus.* Lob. Ic. 131. J. B. 2. 666.

9. Tulipa; flore pleno; centifolia; præcox.

10. Tulipa; pumila; præcox.

11. Tulipa; ſerotina.

12. Tulipa; dubia. *Boerh. Ind. alt. Plant.*

Tulipa is a *Turkiſh* Word, ſignifying a Turbant. This beautiful Plant, which was firſt deſcribed by *Geſner*, was brought into *Europe* from *Conſtantinople*, in the Year 1590. The *Dutch*, and eſpecially thoſe of *Harlem*, have often given an hundred Ducats for the Root of a Tulip. There are no Plants ſo variable and tranſmutable in their Colours, as a Poppy, and a Tulip; and thoſe Colours are chang'd by tranſplanting; and, if the Seeds of one Tulip are ſown, they produce Flowers of all ſorts of Colours.

This Plant ſeems to be of a fine, gentle emollient Virtue, like other Bulbs; but the Price has been an Impediment to its Uſe. In ſome reſpects it reſembles the Onion, but its Bulb is not ſo aromatic. The Bulb gently roaſted is ſaid to afford good Nutriment, and to provoke Luſt. *Hiſt. Plant. adſcript. Boerhaav.*

TULIPA CAPENSIS. A Name for the *Hæmanthe Africanus.*

TULIPIFERA, of *Tulipa*, a Tulip, and *fero* to bear. THE TULIP-TREE.

The Characters are;

The Flower conſiſts of ſeveral Leaves, which expand in ſuch a manner, as, by ſome thought, to reſemble a Tulip; the Pointal riſes in the Centre of the Flower, ſurrounded by a great Number of Chives; and afterwards becomes a ſquamous Fruit, or Cone growing erect. To theſe Marks may be added, the Leaves, for the moſt part, being angular, the upper Part is hollowed, as if cut off with Sciſſars, terminating in two Points.

Miller mentions two Sorts of *Tulipifera*; which are,

1. Tulipifera; Arbor Virginiana. *H. L.* THE VIRGINIAN TULIP-TREE.

2. Tulipifera; Virginiana, laurinis Foliis, averſa parte Rore cœruleo tinctis Condi-baccifera. *Pluk. Phyſ.* THE LAUREL-LEAVED TULIP-TREE.

The firſt Sort is very common in *America*, where it grows to a great Magnitude; but in *England* there are, at preſent, but very few of them, which have arrived to any conſiderable Stature. This Sort was formerly kept in Pots and Tubs, and houſed in Winter with great Care; in which Management the Plants made but poor Progreſs, nor would ever have produced Flowers. But, about fifty Years ago, there was one of theſe planted out, in a Wilderneſs, in the Gardens of the Right Honourable the Earl of *Peterborough*, at *Parſons Green* near *Fulham*, which ſoon convinced the Curious of their Miſtake in the Culture of this Tree, by the great Progreſs it made; and in a few Years after it produced Flowers. This Tree is yet ſtanding, and annually produces a great Quantity of Flowers; though ſome of the Branches begin to decay, which perhaps may have been occaſioned by its being too cloſely ſurrounded by other Trees, whoſe Roots are ſo much entangled with thoſe of this Tree, that they draw the Nouriſhment of the Ground from it. In ſome Years this Tree produces Cones, but they have not ever been perfected ſo as to contain good Seeds.

There are ſome other Trees of this Kind, which have produced Flowers ſeveral Years, though I believe none of them are very large; the biggeſt I have ſeen (excepting that at *Parſons Green*) is not more than twenty-five Feet high; whereas my Lord *Peterborough's* is upwards of fifty Feet high, and is proportionably large in the Trunk; but this has a naked Body near forty Feet high, all the Branches growing near the Top of the Tree, which might be occaſioned by being ſo cloſely ſurrounded with other Trees; for I have obſerved, where-ever they have a more open Situation, they are ſubject to extend their Branches, and do not aſpire upwards very much, though they gennerally have one upright Shoot in the middle, much after the Manner of the Plane-tree, whoſe Manner of Growth is very like that of this Tree.

The Flowers, which theſe Trees produce, are by no means like thoſe of the Tulip, though many Perſons have been ſo incurious as to imagine they are ſo; eſpecially the Inhabitants of *America*, who firſt gave the Name of Tulip-Tree unto this Plant, by which Name it has been ſince called by the Inhabitants of *Europe*, who received it from them, with the Plant, many Years ſince; but I have not heard, that any of theſe Trees have flowered in any Part of *Europe*, except in *England.*

Mr. *Cateſby* in his Natural Hiſtory of *Carolina*, &c. ſays, there are ſome of theſe Trees in *America*, which are thirty Feet in Circumference; that the Boughs are very unequal and irregular, making ſeveral Bends or Elbows, which makes the Trees diſtinguiſhable at a great Diſtance, even when they have no Leaves upon them. They are found in moſt Parts of the Southern Continent of *America*, from the Cape of *Florida* to *New-England*, where the Timber is of great Uſe.

The Laurel-leaved Tulip-Tree is at preſent very rare in *England*, though formerly there were ſeveral of theſe Trees in the Garden of the Biſhop of *London*, at *Fulham*; and thoſe of the Dutcheſs of *Beaufort*, at *Chelſea*; but theſe have been ſince loſt, ſo that there are very few of them to be ſeen in the *Engliſh* Gardens. The largeſt Tree of this Kind, which I know at preſent, is in the Gardens of Mr. *Peter Collinſon* at *Peckham*, which has produced a great Number of Flowers the three Years paſt.

Though I have inſerted this Tree under this Title, (which is the Name, by which it was firſt brought into *England*) yet it does not ſtrictly belong to this Place, there being a Genus under which this Plant ſhould be ranged, which was eſtabliſhed by Father *Plumier*, by the Name of *Magnolia*, in Honour to the learned Botaniſt *Peter Magnol*, Profeſſor of Botany and Phyſic in the Univerſity of *Montpelier*. This Plant is curiouſly figured in the third Part of Mr. *Cateſby's Natural Hiſtory of Carolina*, by the Name of *Magnolia Lauri Folio ſubtus albicante*: He deſcribes it to be a ſmall Tree, ſeldom growing more than ſixteen Feet high; that the Wood is white and ſpongy, covered over with a white Bark: The Leaves are in Shape like thoſe of the common Bay, of a pale-green Colour, and white on their Backſides. In *May* they begin to produce their Flowers, which are white, and very fragrant; theſe are continued the moſt Part of Summer, during which time the Woods are perfumed with their Odour. When the Petals of theſe Flowers are decayed, the Pointal becomes a conical Fruit, about the Size of a large Walnut, thick ſet with Knobs or Riſings, from each of which

which, when the Fruit is ripe, are discharged flat Seeds, of the Bigness of French Beans, having a Kernel, within a thin Shell, covered with a red Skin. These red Seeds, when discharged from their Cells, fall not to the Ground, but are supported by small white Threads, of about two Inches in Length, which make a very beautiful Appearance. The Fruit is at first green; when ripe, red; and, when declining, turns brown. The Tree grows naturally in moist Places, and often in shallow Water; and, what is very extraordinary, they, being removed on high dry Ground, become more regular and handsome, and are more prolific of Flowers and Fruit. They usually lose their Leaves in Winter, unless it be moderate. It is called by some, *The sweet Bay.*

There is, also, another Sort of this Tree, which hath been lately brought into *England*, which is called, by Father *Plumier*, *Magnolia amplissimo flobe albo, fructu cæruleo.* This is esteemed one of the most beautiful Trees in *America*, where they usually grow in moist swampy Woods; and often rise to the Height of sixty Feet, or more: The Leaves are much larger than those of our common Laurels, and are of a light-green Colour; the Flowers, I am told, are very large, of a whitish Colour, and very fragrant: The Fruit is shaped like that of the former Sort, but is much larger, and emits the Seeds in like Manner; so that it is in Beauty from *May* to *November*; and the Leaves, always remaining green, afford an elegant Prospect in Winter: They are of quick Growth, and generally rise with strait Stems, which is a great Addition to their Beauty; and, since they are hardy enough to endure the Cold of our Climate in the open Ground, I doubt not, but, in a few Years, we shall have the Pleasure of seeing its beautiful Flowers, there being several Trees planted in the Gardens of some curious Persons near *London*, where they have borne the Cold of the three last Winters, without Shelter; and make considerable Progress every Year. *Miller's Dictionary, Vol.* I.

TULPBOOM. A Name for the *Lepidocarpodendron*; *foliis angustis, brevioribus, salignis; calycis squamis elegantissimè ex roseo, aureo, albo, atro rubro variegatis; florum plumis albis.*

TULOS. Τύλος A Callus.

TUMBABA, or TUMPABAR. Live Sulphur. *Rulandus.*

TUMBALUM, or TUBEL. The Scales (*Squamæ*) of Metals.

TUMBIL. Earth. *Rulandus.*

TUMOR.

By a Tumor, Physicians mean any Part of the Body that is preternaturally enlarged, or swelled; and its Situation and State may be known, both by seeing and feeling. But, although it has been usual to refer Excrescences, such as Warts and Corns, with other similar Pustules in the Nostrils and *Pudenda*, to the Class of Tumors; yet as these Excrescences do not grow beneath the Skin, but without, or upon the Skin, they may be properly distinguished from Tumors.

Tumors are of different Kinds, and assume different Names, according to the Causes, whence they proceed; and the particular Places, in which they are situated. Some are called *hot*, others *cold* and *watery*; some *windy*, others *scirrhous*; and some *benign*, others *malignant*. Some Tumors are contained in a membranous Bag, like a proper Coat, and, therefore, are called *encysted* Tumors. If a Tumor appears in the Arteries, they are called *Aneurisms*; if in the Veins, *Varices*; if in the Veins of the *Anus*, or *Intestinum Rectum*, the Disorder is termed *Hæmorrhoids*; if in the Scrotum, Insides of the Thighs, or Navel, they assume the Appellation of Hernias, or Ruptures: But if any *Pus*, or Matter, be formed in a Tumor, it is called an Abscess. When a Tumor rises on the Bones, it is named Exostosis.

All these various Sorts of Tumors are generally subdivided into several other Species. Thus, the hot and burning Tumors, which are the same with Inflammations, when they are violent, and rise externally, are termed Phlegmons; if smaller, and gentler, they are called Furuncles. When the Inflammation is not seated deep in the Flesh, but only spreads superficially upon the Skin, it is commonly named an Erysipelas. A Tumor, or Inflammation, on the Extremities of the Fingers, is termed a Paronychia, or Whitlow; but in the Inside of the Thighs, in the Groin, or under the Arm-pits, a Bubo; but near the Ears, a Parotis: But if, from extreme Cold, violent Inflammations be raised in the Hands or Feet, they are named Perniones, or Chilblains. Other Inflammations assume different Appellations, according to the different Parts of the Body which they affect. Thus, in the medicinal Writers, we frequently read of Inflammations in the Breasts, Eyes, Tonsils, Testicles, Arms and Legs.

The Method of treating encysted Tumors.

If Tumors, or Tubercles, arise in the Body, contained in certain Coats; they receive the Appellation of encysted Tumors, which are generally unaccompanied with Pain, of the same Colour with the rest of the Skin; and sometimes harder, and sometimes softer. This Species of Tumor is produced by certain Obstructions in the Glands, or in the Fat; and appear in almost all Parts of the Body, particularly in the Head, Face, and Neck, (see *Tab.* XXXIII *Fig.* 13.) frequently occasioning a prodigious Deformity. The Coat, which is often very thick, is formed either by the obstructed Gland, or by some Cell of the Membrana Adiposa. They are, at first, small; and, generally, moveable; but, in time, they gradually increase; and, sometimes, arrive to an enormous and surprizing Size. Their Substance is sometimes thinner, and softer; and, at other times, harder and thicker. Their Figure is very various; some have the Shape of Filberts, Acorns, Balls, Walnuts, or Eggs; sometimes they assume the Form of a Pear, like a fleshy Excrescence suspended, as it were, by a Stalk; some have a broad Base, and some resemble a Fist, some a Head; with many other Shapes. Some grow so very large, as to weigh many Pounds; others adhere firmly to the adjacent Parts; and, at last, become entirely immoveable; and others resemble a Callus, or a Cartilage, in Hardness; some, however, continue always moveable; and some always soft. Encysted Tumors are, also, distinguished by the different Nature and Consistence of the Matter, which they contain. When the Matter of a Tumor resembles a Pultice, it is termed *Atheroma*; when like Honey, *Meliceris*; when it is like Fat, Suet, or Lard, *Steatoma*; when it resembles an indurated Gland, *Scirrhus*; and, when it seems to be a fleshy Substance, it is called *Sarcoma*. In some Patients, as *Celsus* observes, they are found like Concretions of Hair. These Tumors are, also, variously denominated, according to their various Situations. When one arises in the Scalp, it is by some named *Talpa*, *Testudo*, or *Lupia*; in the Neck, *Struma*, or *Scrofula*; but, if they appear in the Hands, or Feet, especially near the Tendons of the Muscles, they are called *Ganglia.*

Encysted Tumors may be easily known from others, by seeing and feeling them; but, they are not so easily distinguished from one another, unless we are able, by the Touch, to discover some Difference in the Consistence of the Matter, whether it be hard, thick, and tenacious; or, soft, thin, and liquid; for, as the Colour of the external Skin suffers little or no Alteration by these Tumors, we can learn little or nothing from it: Nor is it a Matter of great Importance, to know the Nature of the included Matter before the Cure, the Hardness only excepted; for, whatever Matter they contain, the Method of Cure is nearly the same. It is, however, necessary to be observed, that the Scirrhus and the Sarcoma, are the hardest of this Species of Tumors; next to these, is the Steatoma; the rest are softer, and, sometimes, differ a little in their Treatment, according to their different Degrees of Consistence. Those Tumors of the Neck, which are called *Scrofulous*, or *Strumous*, are, generally, said to be indurated Glands; but I have frequently observed Steatomas, and other encysted Tumors, to proceed from the Fat of the Neck: For it seems scarcely possible, that these small Glands, situated in the Sides of the Neck, should, sometimes, increase to so monstrous a Size, as to hang down over the Belly; which is frequently the Case with the *Tyrolese*, who are troubled with this strumous Affection, which may easily happen, when the Disorder is lodged in the Fat. But, besides these, there are sometimes smaller and harder Tumors in the Neck, which proceed from the Induration of these Glands, which then belong to the scirrhous Species.

If the Pain of encysted Tumors be not violent, if their Bulk and Hardness be not formidable, they are attended with little Danger. Whence it is not surprising, that some, especially among the poorer Sort, bear them as long as they live, rather than submit to the Severity of chirurgical Operations. But if, as it sometimes happens, their Size should greatly increase, so as to weigh ten, twenty, or more Pounds; if they should begin to excite Pain; as is commonly the Case in scirrhous Tumors; they not only produce a monstrous Deformity, but intolerable Uneasiness; and, unless seasonably extirpated, they induce a Consumption and Weakness, or a Cancer; and the greatest Danger of Death. But, in the Cure of these Tumors, the Use of the Knife is almost always necessary; for they are not easily digested, or brought to a Suppuration. If they are recent, soft, moveable, and small, they may be readily and safely extirpated with the Knife; but not without Danger, if they are large, hard, and resist the Touch; especially if they be situated near the larger Veins and Arteries, or about the Nerves, Tendons or Joints; or if the Patient be worn out with Infirmities, or old Age: The Surgeon, therefore, must regulate his Method of Cure according to the Nature of the Disorder, and Circumstances of the Patient.

Of these Tumors, various Methods of Cure have been instituted. Many Surgeons direct them to be immediately extirpated by the Knife; but, according to the Precept of *Hippocrates*, I would not leave mild Means unattempted; For, when the Tumor is recent, and the Patient is of a lax, delicate Habit, it seems expedient to attempt Resolution or Suppuration, before the Application of the Knife. But, when the Tumor is inveterate and hard, external Remedies ought not to be applied; which would be so far from promoting Digestion, especially in a Scirrhus, or Steatoma, that they would increase the Tumor, and make it degenerate into a Cancer; whereas, without topical Applications, the Patient might have been supported under them many Years. In such Cases, therefore, immediate Recourse must be had to the Knife. But, if the Timidity of the Patient will not permit him to yield to the Knife, so that he will allow of nothing but external Remedies, digestive Plaisters may be properly applied; such as the Plaister of *Ammoniacum*, of *Galbanum*, of Frogs

With Mercury, of *Diachylon* with Mercury, the *Emplaſtrum Oxycroceum*, *Mynſicht*'s diaphoretic Plaiſter, the *Emplaſtrum Diaſaponis ſive miraculoſum*, and the like. *Sculletus* aſſerts, that he has cured various Tumors, of the melicerous Kind, with the *Ceratum Diaſmapios*. But, before a Plaiſter of this Kind is applied, the Tumor ought to be anointed with the Peruvian Balſam, the Oil of Soap, or Petroleum. By theſe means, when the Tumors are not inveterate, nor of the larger Size, they may be again diſcuſſed; and, for the more readily anſwering of this Intention, it may be expedient frequently to rub the Part with a warm mercurial Ointment; eſpecially if the Tumor be of the ſcirrhous Kind.

When nothing can be effected by Plaiſters, or digeſtive Medicines, Suppuration muſt be attempted; eſpecially if the Tumor be ſtill ſoft, as in an *Atheroma*, or *Meliceris*. The Plaiſter of Diachylon with the Gums, and digeſtive and emollient Cataplaſms, frequently applied to the Tumor, excellently anſwer this Intention; eſpecially, if the Middle of the Part affected be ſeveral times well moiſtened every Day with the ſtrongeſt Spirit of Sal Ammoniac; and, as ſoon as the included Matter is perceived to have ripened, the Tumor ſhould be opened by a large Inciſion, and the Pus diſcharged. After this Operation, the Tumor, with its Bag, muſt be removed by the Application of ſtrong Digeſtives, or of mild corroſive Medicines; for, if any of the Coat ſhould remain, after the Abſceſs is healed, a Relapſe will gradually enſue; and, therefore, it is extremely neceſſary to apply, daily, a Diachylon-plaiſter, till the Deterſion of the Wound be completed: Thus, whatever preternatural Subſtance remains in the Wound, will be more expeditiouſly ſoftened, and the Wound more conveniently healed.

If, by theſe means, neither Diſcuſſion, nor Suppuration, can be obtained, but the Tumor rather gradually increaſes, leſt it ſhould become too much enlarged and be concreted with the neighbouring Parts, or degenerate into a Cancer, ſo as to yield to no Medicine, or Operation, they ought to be immediately extirpated. But theſe encyſted Tumors ought to be extirpated by different Methods, according to their different Natures. Thoſe which have a ſlender Root, and hang, as it were, by a Stalk, cannot be more expeditiouſly removed than by a Ligature, like Warts, or other Excreſcences; by which means, in a few Days, it will drop off, as it were, ſpontaneouſly; or it may be extirpated with the Knife; and the Wound may be dreſſed, and healed, like other Wounds: But if, by the Inciſion, a large Artery ſhould be wounded, the Hæmorrhage may be ſtopt with ſome ſtyptic Medicine, or the actual Cautery; or the Artery may be taken up with a Needle and Thread. Laſtly, theſe Tumors may be removed with corroſive Medicines daily applied round the Root, and retained by Plaiſters, till it falls off; or, the greateſt Part of the Root being conſumed, it may be conveniently cut through.

When the Root of the Tumor is broad, recourſe muſt be had to Inciſion, or Eſcharotics, although the latter be generally preferred. The Inciſion may be thus performed: The Skin muſt be divided longitudinally, through the Middle of the Tumor; but, if this Wound be not ſufficiently large, another Inciſion muſt be made tranſverſely, in the Form of a Croſs; then, with the Knife, and Fingers, the Tumor, with its Coat, muſt be carefully ſeparated from the Skin and Fleſh, keeping the Coat entire, that the Tumor may be extracted whole. That this may be done more commodiouſly, an Aſſiſtant ſhould draw, aſunder the Lips of the Wound, with Hooks; and the Blood, as it flows, ſhould be wiped up with a Sponge, that it may not hinder the Operation. As ſoon as the Coat of the Tumor appears, which is uſually, whitiſh, and ſtretched, the Surgeon muſt keep it raiſed with his Left Hand, if it be ſmall; but, if it be too large to be held in the Fingers, another Aſſiſtant ought to keep the Tumor raiſed with a Hook, (See *Tab.* XXIX. *Fig.* 2.) or with the Forceps repreſented in *Tab.* XLIV. *Fig.* 1. or with a crooked Needle and Thread: Thus, the Tumor, being cautiouſly ſeparated from the contiguous Parts, it may be extracted entire. The Task is eaſily performed, if the Tumor be moveable; but, if fixed, the Operation requires both Pains and Skill. Particular Care muſt be taken, not to wound any of the principal Parts that may be ſituated near the Tumor; and, if the Tumor is to be taken from the Leg, or Arm, where a large Artery or Vein muſt be divided, the Tournequet ought, firſt, to be applied to the Limb. Theſe Directions being duly obſerved, Tumors of this Kind, weighing ſeveral Pounds, may be extirpated, not only from the fleſhy Parts, but, alſo, when they adhere to the Bones and Jaws.

The Tumor being rightly extracted; if the Wound be ſmall, and the Hæmorrhage ſlight, the Lips muſt be brought into Contact with the Fingers, Lint and Compreſſes muſt be applied, and the Whole ſecured with a Bandage: Thus will the Wound be healed in a few Days. But, if the Hæmorrhage be large, it muſt be ſtopped, as in other Wounds, principally by the Application of Lint, Compreſſes, and Bandages, by Aſtringents, by a Ligature, or the actual Cautery. But, when, in the Operation, either by Negligence, or Accident, the Coat, including the Tumor, particularly, of the ſofter Kind, is wounded, as may ſometimes happen in preventing the Eye from being injured, when the Tumor is in the Eye-lid, or by cautiouſly avoiding a large Vein or Artery in any other Part of the Body, particular Care muſt be taken, that the Coat be entirely extracted; otherwiſe the Tumor will eaſily return. In a Scirrhus, Sarcoma, or Steatoma, when the glandular, fleſhy, or pinguious Subſtance is hard, though the Coat be wounded, the Matter will not flow out: Wherefore the whole Tumor, with its Bag, muſt be carefully extracted, as we have already directed; ſo that none of the Coat may be left behind. In other Tumors, where the Matter is ſoft and fluid, if the Coat be wounded or lacerated, the Contents are immediately diſcharged; then all that can be extracted of the remaining Bag, muſt not only be removed with the Knife and Sciſſars, but, if any Fragments ſhould happen to remain, they muſt be extirpated with corroſive Medicines; ſuch as red Precipitate, with burnt Alum, or the *Unguentum Ægyptiacum* mixed with a Digeſtive: And then the Wound may be healed like other Wounds, without the Danger of a Relapſe.

When, in the Extirpation of encyſted Tumors, Eſcharotics are preferred to the Knife, the *Lapis Infernalis*, Butter of Antimony, or the like, may be applied: But, in my Opinion, when the Tumors are large, hard, of a cancerous Diſpoſition, inveterate, and painful, the Method by Eſcharotics is often dangerous, becauſe a Scirrhus is eaſily changed into a Cancer: And in other Caſes they cannot be totally conſumed without intenſe Pain, large Effuſions of Blood, with great Decay of Strength, or the Loſs of Life. It is, therefore, ſafer to extirpate large hard Tumors by Inciſion, though ſometimes they may be happily removed by Eſcharotics. But if the Tumors be of ſofter Kinds, ſuch as the *Atheroma* or *Meliceris*, I frequently uſe this Method, opening the Integuments and Bag with a Cauſtic, or with a Knife, in the Middle of the Tumor, and diſcharging the contained Matter; then by promoting Suppuration, and the Uſe of Corroſives, I extirpate the Bag; and deterge and incarn, as in other Wounds. This Method I think milder than removing the entire Coat by Inciſion. *Heiſt. Chir.*

For PHLEGMON, ſee INFLAMMATIO.

For Abſceſſes, ſee ABSCESSUS.

For Tumors and Inflammations of the Breaſts, ſee MAMMÆ.

For Inflammations of the Teſticles, ſee TESTICULI.

For Eryſipelatous Tumours, ſee ERYSIPELAS.

For Furuncles, ſee FURUNCULUS.

For Bubos, ſee BUBO.

For Carbuncles, ſee CARBUNCULUS.

For Chilblains, ſee PERNIO.

For the Gangrene and Sphacelus, ſee GANGRENA.

For Burnings, ſee AMBUSTIO.

For ſcirrhous Tumors, ſee SCIRRHUS.

For cancerous Tumors, ſee CARCINOMA.

For œdematous Tumors, ſee OEDEMA.

For fungous and dropſical Tumors of the Joints, ſee FUNGUS.

For fleſhy Tumors, ſee NÆVUS.

For Tumors of the parotid Glands, ſee PAROTIS.

TUNA. A Name for the *Opuntia*. *Indian* Fig.

TUNETANUS FLOS. A Name for the AFRICANUS FLOS.

TUNICA. A Name for the *Caryophyllus*; *altilis*, *major*.

TUPA-IPI. A Species of large Onion, which grows in *Braſil*, called by the *Portugueſe Cebola Albæraa*.

TUPHUS, or TUFUS. See TYPHOS.

TUPI-EWA. A Name for the SCOPARIA.

TURAS. The ſecret Effect of the Water; as *Thonus* is that of the Earth; and *Samies* that of the Air. *Paracelſus.*

TURBEDON. The *Arabic* Name for TURBITH.

TURBINATA OSSA. The turbinated Bones of the Noſe.

TURBINATUM. The Pineal Gland.

TURBITH and TURPETHUM. Offic. *Turbith Alexandrinum Officinarum.* Ger. 335. Emac. 415. *Turbith Officinarum.* Park. Theat. 1610. *Turpethum repens foliis Althææ, vel Indicum.* C. B. P. 149. *Convolvulus Indicus, alatus, maximus, foliis Ibiſco nonnihil ſimilibus, anguloſis.* Raii. Hiſt. 2. 1882. Tourn. Inſt. 84. *Convolvulus Zeylanicus alatus maximis foliis, Ibiſco nonnihil ſimilibus anguloſis. Tiraſtawalu. Turbith Arabum legitimum & Officinarum.* H. Muſ. Zeyl. 26. TURBITH.

This is a Root about a Finger thick, brown on the Outſide, and whitiſh and ſomewhat reſinous within; of an hot Taſte.

Herman, in his *Catalog. Hortenſ. Lugd. Batav.* gives a Figure and Deſcription of it. He ſays, the Root is long and ſpreading; when broken, yielding a milky Juice, which ſoon hardens into a reſinous Subſtance. It ſhoots forth many long, trailing, and climbing Branches, that twiſt one about the other like the great Bindweed; the Leaves are ſoft and downy, and in Shape like thoſe of Marſhmallows. The Flowers come forth among the Leaves, ſeveral together, on long Foot-ſtalks, of a white Colour, in Shape like thoſe of the great *Convolvulus*, of which it is a Species. It grows plentifully in *Ceylon* and *Malabar* in the *Eaſt-Indies*; from whence the Roots are brought to us, being the only Parts uſed.

Turbith is a pretty ſtrong Cathartic, purging tough ſerous Humours from the remote Parts; and thereby helps the Dropſy, Gout and Rheumatiſm; and is put into ſeveral of the ſtronger purging Compoſitions

The

The *Pulvis Diaturpethi compoſitus* takes its Name from this Root. *Miller's Bot. Off.*

Turbith Gallorum. A Name for the *Seſeli*; *quæ Ferulæ facie*; *Thapſia.*

TURBOTUS. The Turbot. See RHOMBUS.

TURCHOIS. Offic. Worm. Muſ. 106. Charlt. Foſſ. 39. Boet. 265. De Laet de Lap. 87. *Turcheſia.* Aldrov. Muſ. Metall. 902. THE TURQUOIS.

This is a precious Stone of the opaque Kind, and variegated with Streaks of green, white, and blue. There are two Species of it, the Oriental, and the Occidental: The former is more blue than green, and is found in *Perſia* and the *Eaſt-Indies.* There are two Sorts of it; one, which always retains its Colour, and is called the Turchois of the old Rock; and another, which loſes a little of its Colour, becomes greeniſh, and is called the Turchois of the new Rock.

The occidental Turchoiſe is of a Colour partly green, and partly white: It is found in *Spain, Germany, Bohemia,* and *Sileſia.*

Sometimes Turchoiſes are found as large as an ordinary Nut, but very rarely; ſince their Bulk is generally no greater than that of a very ſmall Nut.

This Stone is thought proper to fortify the Sight, and the Spirits of the Brain; but this pretended Virtue is not to be confided in. If it is reduced to a fine Powder, and exhibited internally, it operates like other alkaline Subſtances; abſorbs Acids, and ſtops Fluxes; Hemorrhages, and Vomiting. The Doſe is from ſix Grains to one Scruple. *Lemery des Drogues.*

The Virtues of this Stone are very great in Falls; a memorable Inſtance of which is related by *Boetius* concerning himſelf. *Scylla* would have it to be a Sort of Fiſh's Tooth. Dr. *Woodward* is of Opinion, that the Stones which the Jewellers call Turquoiſe, are only Fragments of Bones ting'd with a bleuiſh Colour in the Veins of Copper Mines, where they are found. Theſe Stones are poliſhed by the Lapidaries, and ſet in Rings. *Woodw.* Attempt. F. 2. *Brown's* Travels. *Dale.*

TURCHOSA. A Name for the TURCHOIS.

TURDUS. Offic. *Turdus vulgaris.* Mer. Pin. 176. *Turdus viſcivorus minor.* Bellon. des Oyſe. 326. *Turdus ſimpliciter dictus.* Aldrov. Ornith. 2. 600. *Turdus minor alter.* Geſn. de Avib. 690. *Turdus muſicus.* Schw. A. 361. *Turdus ſimpliciter dictus, ſive Viſcivorus minor.* Raii Ornith. 188. THE MAVIS, or THRUSH.

Theſe Birds, when ſtuffed with Myrtle-berries, and roaſted, are ſaid to be exhibited with Succeſs to thoſe who labour under Fluxes. *Plin. Bellon.* In the Time of the Plague they are, by *Alexand. Bened.* ſaid to be highly beneficial when macerated in Vinegar. The Powder of theſe Birds is, by *Gainarius*, recommended againſt the Effects of the *Napellus* or Monkſhood. *Dale.*

Turdus is alſo a Name for a Fiſh, which Authors thus diſtinguiſh.

TURDUS. Offic. Charlt. Piſc. 13. Bellon. de Aquat. 258. Mer. Pin. 186. *Turdus vulgatiſſimus.* Raii Ichth. 319. Ejuſd. Synop. Piſc. 136. *Turdus primus*, Rondel de Piſc. 174. Aldrov. de Piſc. 21. Jonſ. de Piſc. 26. *Turdus primus.* Geſn. de Aquat. 1016. THE WRASS, or OLD-WIFE.

This Animal is found in the main Ocean, and in the *Mediterranean. Alexander Trallian* highly recommends it in the Epilepſy and Pleuriſy. *Dale.*

TURNERA.

The Characters are;

It hath a funnel-ſhaped Flower, conſiſting of five Leaves, which are faſtened to the Calyx, which is monopetalous, and divided into five Parts at the Top: Under the Flower-cup there are two Leaves, which join at the Bottom, and ſurround the Cup: From the Centre of the Flower-cup ariſes the Pointal, which is divided into three Parts to the Bottom, and ſurrounded by five Stamina. This Pointal afterwards becomes an almoſt ſpherical Fruit, which is divided into three Parts, and filled with roundiſh Seeds, which are faſtened to the Placenta by ſlender Threads.

Miller mentions two Sorts of *Turnera*; which are,

1. Turnera fruteſcens ulmifolia. *Plum. Nov. Gen.* 15.

2. Turnera fruteſcens, folio longiore & mucronato.

Theſe Plants are both of them Natives of the warm Parts of *America.* The firſt Species was found by F. *Plumier* in *Martinico*, who gave it the Name of *Turnera*, from Dr. *Turner*, a famous *Engliſh* Phyſician, who lived in Queen *Elizabeth's* Reign, and wrote an Herbal, in which he has principally figured and deſcribed the uſeful Plants.

The other Species was diſcovered by Sir *Hans Sloane*, Baronet, who has figured it in his Natural Hiſtory of *Jamaica*, under the following Name; *Ciſtus urticæ folio, flore luteo, vaſculis trigonis.* But both theſe Sorts were obſerved by Dr. *William Houſtoun*, in ſeveral Parts of *America. Miller's Dictionary, Vol.* 2.

TURNESIUM. τερνήσιον, The Name of a Weight mentioned by *N. Myrepſus. Sect.* 8. *C.* 116. But it is not known what Weight he means.

TURPETHUM. Turbith.

TURPETHUM MINERALE. Turpeth, or Turbith Mineral. See MERCURIUS.

TURREIS. The Name of a Stone, which is ſaid to preſerve the Bones from being fractured in a Fall.

TURRITIS.

The Characters are;

The Pod is pretty flat; the Seed is not marginated, but in other reſpects like the *Leucoium* and *Heſperis*; the Pods end in a pyradimical Form.

Boerhaave mentions four Sorts of *Turritis*; which are,

1. Turritis; foliis inferioribus cichoraceis, cæteris perfoliatæ. *T.* 224. *Braſſica ſylveſtris, foliis circa radicem cichoraceis.* C. B. P. 112. *Sinapi album.* Lugd. 1688.

2. Turritis; quæ Barbarea muralis. *J. B.* 2. 869. *Eryſimo ſimilis hirſuta alba.* C. B. Prodr. 42.

3. Turritis; vulgaris; ramoſa. *T.* 244. *Burſa Paſtoria, ſive Piloſella ſiliquoſa.* J. B. 870.

4. Turritis; folio Leucoii *Tourn. Inſt.* 224. *Boerh. Ind A.* 215. *Camelina.* Offic. Ger. 213. Emac. 273. *Camelina ſive Myagrum alterum amarum.* Park. Theat. 868. *Myagrum ſiliqua longa.* C. B. P. 109. *Myagro affinis planta ſiliquis longis.* J. B. 2. 894. Raii Synop. 3. 298. *Eryſimum Galeno & Theophraſto.* Raii Hiſt. 1. 811. TREACLE WORMSEED.

This is ſometimes found in putrid Places, and flowers in *June* and *July.* The Herb itſelf is uſed, which kills and diſlodges Worms, corroborates the Stomach, expels Poiſon, is beneficial to paralytic and epileptic Patients, and cures Ulcers of the Mouth. *Dale.*

Beſides the foregoing Species of *Turritis*, *Dale* mentions the following Sort; which is,

TURRITIS. *Offic. Ger.* 212. *Emac.* 272. *Raii Hiſt.* 1. 799. *Synop.* 3. 293. *Tourn. Inſt.* 223. *Turritis vulgatior*, J. B. 2. 836. Park. Theat. 852. *Lobelio Braſſica ſylveſtris hiſpida, non ramoſa.* C. B. P. 112. *Leucoium flore albo, ſiliquis uno verſu diſpoſitis, & reflexis.* Ejuſd. 243. TOWER MUSTARD.

This is found in ſandy Hillocks, and flowers in *June.* The only Part of it uſed, is the Herb itſelf; the Juice of which is, by ſome, recommended for curing Ulcers of the Mouth, and killing Worms. *Dale.*

TURSIO. The Porpoiſe.

TURTAS, τύρτας. A ſort of Tart, made of Dates, Meal, and Water, and baked under the Embers. *Erotian.*

TURTUR. Offic. Schrod. 5. 324. Mer. Pin. 175. Bellon. des Oyſe. 310. Aldrov. Ornith. 2. 505. Geſn. de Avib. 277. Schw. A. 362. Charlt. Exer. 85. Jonſ. de Avib. 64. Raii Ornith. 183. Ejuſd. Synop. 61. Will. Ornith. 134. THE TURTLE-DOVE.

This Bird, and its Fat, are uſed. In Virtues it agrees with the Pigeon, eſpecially in ſtopping Dyſenteries, and immoderate Diſcharges of the Menſes. The Fat, collected when the Animal is roaſting, is, according to *Schroder*, properly uſed as an Ointment in Diſorders of the Kidneys, Abdomen, Breaſt, and Groins. *Dale.*

TURUNDÆ. Tents.

Tents are ſometimes uſed in dreſſing Wounds, and are made of ſcraped Lint artfully rolled up, with a broad Head like a Nail. Their Length and Thickneſs are different, according to the different Sizes of the Wound for which they are deſigned. See *Tab.* XXIII. *Lit.* K, L, M, and N. This ſort of Tents are principally uſed in deep Wounds and Ulcers; for by their Aſſiſtance, 1. Remedies may not only be conveyed to the innermoſt Receſſes and Cavities of the Wound; but, 2. they prevent the external Parts of the Wound from coaleſcing, before the Bottom appears to be healed. 3. By their Means, alſo, Wounds may be conveniently cleanſed from Blood, and other Sordes. But they muſt not only be fitted to the Wound, but, alſo, made extremely ſoft, that they may not increaſe the Pain of the Wound. That they may not obſtruct the Healing of the Wound, if it appears to be ſufficiently deterged, and that the Cavities are gradually uniting, the Tents ſhould be leſſened in Size, and, as ſoon as poſſible, entirely laid aſide. And it is not improbable, that the Neglect of this Caution induced ſome Surgeons, both antient and modern, of no mean Reputation, to forbid entirely the Uſe of Tents: Among theſe are *Magatus* and *Belloſte.*

Some Tents are, alſo, made of Linen Rags, not ſcraped, but entire, twiſted together in a conical Form, with a Thread faſtened at its Baſis; but the ſmall End ſhould be a little ſcraped, to render it ſofter, that it may not increaſe the Pain. The Thread is faſtened to the Baſis, that the Tent may be eaſily extracted, if it ſhould accidentally drop into the Cavity of the Abdomen or Thorax. See *Tab.* XXIII. *Fig.* O. This Kind of Tent is principally uſed in Wounds which penetrate into the Cavity of the Abdomen and Thorax, leſt they ſhould heal, before the Blood, and other purulent Matters, be evacuated.

A third Kind of Tent is made for dilating the Oriſice of a Wound, leſt it ſhould be too narrow, that the Blood, Sanies, or any extraneous Subſtance lodged within the Wound, may be more eaſily extracted, or that Remedies may be more conveniently admitted. Theſe Tents are generally made of a Piece of Sponge prepared in a peculiar Manner; or of the dried Roots of Gentian, Turnep, Calamus aromaticus, or Comfrey; which

which are of ſuch a Nature as to imbibe the Matter that flows to them; and, being by theſe means ſwelled, they dilate the Orifice of the Wound. Not unlike Tents are thoſe Tubes or Pipes of Lead or Silver, which are ſometimes uſed for diſcharging Blood or *Pus* out of narrow Wounds or Ulcers; and ſometimes for evacuating dropſical Waters, and Urine. Their Size and Figure vary according as the Nature of the Wound may require. *See Tab.* XXIII. *Lit.* P, Q, R, S, T, V, X. Tents are rejected by *Magatus* and *Bellofte* in *Fiſtulas*. See FISTULA.

Garengeot's Objections to Tents in Wounds of the Abdomen are conſidered under the Article ABDOMEN.

For the Uſe of Tents in the Cure of Inguinal Ruptures, ſee BUBONOCELE.

The Reaſons againſt the Uſe of Tents in Lithotomy are taken Notice of under the Article LITHOTOMIA.

TURUNDULA. A ſmall Tent.

TUS. The ſame as THUS.

TUSAI. A Name for ſeveral Species of *Corona Imperialis*.

TUSSEDO. A Cough.

TUSSICULARIA. *Medicines which excite a Cough.* *Cæl. Aurelianus.*

TUSSILAGO.

The Characters are;

The Root is very creeping; the Flower conſiſts of very numerous Barbulæ, ſtands on a ſingle Stalk, and is included in a Calyx, which has a multifid Baſe.

Boerhaave mentions two Sorts of *Tuſſilago*; which are,

1. Tuſſilago; vulgaris. *C. B. P.* 197. *Tourn. Inſt.* 487. *Boerh. Ind. A.* 101. *Tuſſilago, Farfara.* Offic. *Tuſſilago.* J. B. 3. 563. Ger. 666. Emac. 811. Park. 1220. Rai Hiſt. 1. 259. Synop. 78. COLTS-FOOT.

The Roots of Colts-foot are thick at the Head, from which run ſeveral Strings. The Flowers ſpring up about the latter End of *February*, or the Beginning of *March*, on Stalks about two or three Inches long, beſet with ſharp-pointed ſcaly Leaves; they are yellow, radiated, and in Shape like Dandelion, which turn into Down like them: The Leaves ſpring up, after theſe are gone, ſomewhat roundiſh, but angular, and indented about the Edges, hollowed in next the Stalk, in Shape like Butterbur, but much leſs, whitiſh underneath, having the upper Part green, but covered with a cottony Skin, that is eaſily wiped off. It grows in moiſt watery Places, and flowers early in the Spring. The Leaves and Flowers are uſed.

They are pectoral, and accounted good for Diſeaſes of the Lungs and Breaſt, as Coughs Conſumptions, and Shortneſs of Breath; and are frequently put into pectoral Apozems: The dry Herb, cut ſmall, is ſmoked among Tobacco for Coughs, and other Affections of the Lungs. *Miller's Bot. Off.*

Colts-foot-leaves are bitter, glutinous, and a little ſtyptic; they have the Taſte of an Artichoke, and give but a very faint Tincture of Red to the blue Paper. There ſeems to be in this Plant a Salt reſembling that of Coral, involved in Sulphur, and a great deal of viſcous Phlegm. The Leaves and Flowers are very ſweetening, moderately aperitive, and dedicated (if I may ſo ſay) to the Diſeaſes of the Breaſt, which are occaſioned by acrid and ſaltiſh Seroſities. The Leaves are preſcribed to aſthmatic Perſons, to ſmoke after the manner of Tobacco. Mr. *Boyle* adviſes to mix with thoſe of Colts-foot, Flower of Sulphur, and ſome powdered Amber: He affirms, that this Medicine has cured ſeveral of the Phthiſick. In the Time of *Dioſcorides*, they made thoſe that were afflicted with theſe Diſtempers, receive the Smoak of the Leaves of this Plant at their Mouths. The Flowers and Leaves are uſed in the pectoral Decoctions, and Lohochs to make one ſpit; there is a Syrup and a Conſerve made of theſe Flowers. The following Ptiſan is very good for a dry Cough.

> Pour four Quarts of boiling Water upon four Handfuls of the Leaves of Colts foot, and three Pugils of the Flowers; two Pugils of the Tops of Hyſſop, one Ounce of Raiſins, and three Spoonfuls of *Narbonne* Honey; boil it a little; take the Pot from the Fire; cover it, and ſtrain the Ptiſan when it is cold. *Martyn's Tournefort.*

Hillerius informs us, that he reſtored many Children labouring under an Atrophy, only by the Leaves of Colts-foot, which he ordered to be cut down like other Pot-herbs, made up with a farinaceous Puls, fried in Butter like Sage, and uſed for a long Time, as we are informed by D. *Same ex Obſervat. Hieron. Reuſneri. Rai Hiſt. Plant.*

2. Tuſſilago; Alpina; rotundifolia; glabra. *C. B. P.* 197. *M. H.* 3. 130. *Boerh. Ind. alt. Plant. Vol.* 1.

This Plant, in all Probability, is called *Tuſſilago*, from the Word *Tuſſis*; becauſe it is good for a Cough. It receives the Name *Bechion* from the Greek Word βὴξ, which correſponds to the Latin *Tuſſis*. It is called *Ungula Caballina*, or *Calceum Equinum*, becauſe its Leaf, in Shape, reſembles an Horſe's Foot. It receives the Name of *Farfara*, or *Farfarella*, becauſe its Leaves reſemble thoſe of the white Poplar, or appear to have Meal ſprinkled on them. It is, alſo, called *Filius ante Patrem*, becauſe in the Months of *February* and *March*, when its Leaves have not appeared, it ſuddenly ſends forth its Flowers, which hardly continue above two Days.

The Flowers, Roots, Stalks, Leaves and Fruit, are uſed in Medicine. They are of a penetrating, heating, and lenitive Quality; for which Reaſon they incide thick and pituitous Humours contained in the Lungs; and are good in Coughs, Conſumptions, and Pleuriſies. The recent Leaves bruiſed in a Mortar, and boiled with double the Quantity of Sugar, are excellent in a Phthiſis, an Exulceration of the Kidneys, a long-continued ulcerous Gonorrhœa, and Diſorders of the Stomach ariſing from Phlegm. Colts-foot is accounted *alexipharmic*, becauſe it excites Sweat. The recent Leaves, applied externally, are beneficial for the Cure of Ulcers and Inflammations. Its Juice drank for ſome Days, is ſaid to cure quartan Agues. *Hiſt. Plant. adſcript. Boerhaav.*

TUSSIS. A Cough.

A Cough and an Aſthma are ſo nearly related, and ſo frequently complicated, that the one can hardly be without the other: A Cough, then is a violent Expulſion of a foreign Matter from the Bronchia of the Lungs, by means of their increaſed contracted, or convulſive Force, accompanied with a violent Expiration.

As I intend to give the Hiſtory and Pathology of this Diſorder, I ſhall begin with a Deſcription of thoſe Parts, which moſt immediately concur to the Production of a Cough, that thus we may diſcover the true Eſſence of this convulſive Motion, and be able to underſtand its ſeveral Differences. The primary Seat, then, of a Cough is, that large Canal, by means of which we breathe, and which is divided into two Parts, the Aſpera Arteria, and the Bronchia: The latter of theſe are diſtributed through the Subſtance of the Lungs, whilſt the former reaches from the Lungs to the Fauces. The Origin of the Aſpera Arteria, which is called the Larynx, is a Canal, beginning at the Fauces, and form'd of five Cartilages, connected by three Membranes, the exterior of which is nervous; that in the Middle fleſhy, and the internal glandular: The ſuperior Aperture of this Canal is call'd the Glottis, which is covered with a cartilaginous Covering, called the Epiglottis: The Larynx is ſucceeded by a cartilaginous and membranous Tube, call'd the Aſpera Arteria, which, being wider at the Beginning, and gradually becoming narrower, in its Progreſs to the Lungs, is, near them, divided into two Ramifications, call'd the Bronchia. Theſe Ramifications are divided into numberleſs other, which are diſtributed through the Subſtance of the Lungs, and which conſiſt of cartilaginous Segments, and contractile Membranes; then they terminate in ſmall Veſicles, like Cluſters, which adhere to theſe ſmall bronchial Ramifications, and conſtitute the moſt conſiderable Part of the Lungs.

All theſe pneumonic Canals, from Beginning to End, are ſurrounded with a Membrane, conſiſting of longitudinal and annular Fibres, and furniſh'd with many excretory Ducts and Glands; the Number, Situation and Figure of which is exquiſitely delineated by *Morgagni adverſ. Tab.* XI. *Fig.* 1. Theſe Glands pour into theſe Canals, ſubſervient to Breathing, a thin, roſcid, mild, and lymphatic Humour, which, alſo, in all Probability, drops from thoſe Glands, which externally adhere to the Epiglottis, the arytenoide Cartilages, and the Extremities of the Bronchia. Theſe Glands are repreſented by *Heiſter* in *A. N. C. Cent.* 7 & 8. *Ob.* 63. Provident Nature has beſtowed on theſe Ducts, Veſſels of various Sorts, eſpecially of the arterial Kind, diſtributed from the bronchial Artery: This bronchial Artery takes its Beginning from the Trunk of the Arteria Magna deſcendens, above the Arch of the ſuperior inter-coſtal Arteries; and is divided into three Ramifications, one of which runs externally upon the Aſpera Arteria, whilſt the other two diſtribute many Ramifications through the whole Subſtance of the Membranes of the Trachea, and of the pulmonary Bronchia. Theſe Ducts, alſo, receive venous Veſſels from the bronchial Vein; the Ramifications of which, being propagated in the ſame manner with the Arteries, at laſt, by a large Ramification, terminate in the Trunk of the Vena cava deſcendens, and the Azygos: Both theſe Species of Veſſels were diſcovered and are accurately deſcribed by Mr. *Ruyſch*, in *Epiſt.* 4. And laſtly, the Ducts, ſubſervient to Reſpiration, receive Nerves from the Par vagum, and the inter-coſtal Nerve.

The primary Uſe and Function of theſe Canals is, to afford a commodious Ingreſs of the Air to the Lungs, and a free Return of it thence, in order to facilitate the Circulation of the Blood, ſo neceſſary to Life and Health: For this Purpoſe, theſe Ducts are furniſh'd, firſt, with a large Number of Glands, not for ſecreting an excrementitious Liquor, for this Part is by no means naturally deſtin'd for the Excretion of the Sords, but the Deſign of thoſe Glands is, to diſcharge a thin Lymph, which, by a mild and continual Lubrication, cheriſhes the Membranes of the Trachea and Bronchia, leſt they ſhould become dry by the continual Action of the Air in Inſpiration; and, when this Lymph has perform'd its Office, it is reſolv'd into Exhalations, and carried off with the expired Air, after the manner of cutaneous Perſpiration. For the ſame Purpoſe, theſe Ducts, ſubſervient to

Reſpiration, are furniſh'd, ſecondly, not only with nervous Coats, exquiſitely ſenſible, but, alſo, with muſcular Coats, poſſeſſed of longitudinal and annular Fibres, by means of which they are capable, not only of conſtrictory, but, alſo, of a dilatatory Motion, which provident Nature has beſtow'd on all the nervous and membranous Ducts of the Body, as we find in the Ureters, the biliary Ducts, the Stomach, and Inteſtines: Nor is this Motion without its peculiar Advantages; for it greatly contributes, not only to promote the Ingreſs and Egreſs of the Air, but, alſo, to the Secretion of the Lymph from the above-mentioned Glands, and to the Circulation of the Blood, through the bronchial Veſſels. But, thirdly, tho' theſe membranous Ducts are not of themſelves ſufficient for the Buſineſs of Reſpiration, yet they are ſo neceſſarily connected with the other Parts, ſubſervient to the ſame Purpoſe, ſuch as the Lungs, the Pleura, and the Diaphragm, together with the intercoſtal and abdominal Muſcles, that 'tis almoſt impoſſible, that when one Part acts, all the others ſhould not, alſo, begin to act.

When theſe Parts are in their due and proper Condition, Reſpiration is carried on in a natural Manner: But when any one of them recedes from its natural State, Reſpiration is forthwith injured and perverted. Without conſidering other Diſorders of Reſpiration, we only now treat of a Cough, which always ariſes from a preternatural State of ſome of the above mentioned pneumonic Canals. I don't heſitate to affirm, that what in the Stomach produces a Vomiting, in the Bronchia gives riſe to the Cough; that is, an Inverſion of their tonic Motion; for I am of Opinion, that under a Cough, the bronchial Ducts, being conſtricted from their inferior to their ſuperior Parts, force their contain'd Air quickly and impetuouſly upwards, as if they were to expel ſomething foreign: But ſince, when theſe are diſorder'd, 'tis neceſſary the other Parts of the Breaſt deſtin'd to Reſpiration, and intimately connected with theſe, ſhould, in conſequence of the ſtrict Conſent between them, become Partakers of their inordinate Motions, it is ſufficiently obvious, why the more violent a Cough, which is a preternatural Expiration, is, the more violently the Breaſt, the Abdomen, and the whole Body ſhould be concuſſed. In conſequence of this Conſent, it alſo frequently happens, that when the Stomach, the Diaphragm, the Oeſophagus, the præcordial Nerves, and thoſe diſtributed from them, or the pituitary Membrane of the Noſtrils, are, by any Cauſe, vellicated, the Ducts, ſubſervient to Reſpiration, being by that means affected, a Cough is excited.

If, therefore, a ſpaſmodic, and convulſive Diſorder of theſe Ducts, is the remote Cauſe of a Cough, their Vellication muſt neceſſarily be the immediate Cauſe of ſuch a convulſive Diſorder, and conſequently of the Cough. Every Cough, therefore, has its Seat in the Breaſt, tho' its productive Cauſes are not always lodg'd there. And this Diverſity of remote Cauſes, which concur to the Production of a Cough, produces a great many different Species thereof.

Nor do we intend to conſider that Species of Cough, which, as a terrible Symptom, accompanies various Diſorders: Of this Kind is a Phthiſical Cough, which ariſes from a Colliquation of the Veſicles, and bronchial Veſſels, produced by an Ulcer of the Lungs; and, conſequently, has, for its Foundation, a Solution of Continuity. In this Species of Cough, an ulcerous and foreign Matter is not conveyed through the pulmonary Glands, but tho' the corroded, lacerated, and gaping Cavities of the Bronchia, and, by vellicating the nervous Membranes, produces the Cough. To the Claſs of ſymptomatic Coughs, alſo, belong thoſe which happen in Aſthmas, Peripneumonies, Pleuriſies, a Scirrhus, and Impoſtumation of the Lungs, or an Inflammation of the Diaphragm and Liver. Of the ſymptomatic Kind, are, alſo, thoſe Coughs, which ariſe from a Wound inflicted in a Nerve or Tendon about the Neck; as, alſo, thoſe which ſucceed Convulſions, Epilepſies, and hyſteric Diſorders: For theſe Species of Coughs are, for the moſt part, produced by a Vellication of the Bronchia, only induced by Conſent, ſince the Cauſe of the Diſorder is lodg'd in a Place more or leſs diſtant from the Præcordia.

Nor ſhall we, at great Length, conſider that Species of Cough, which ariſes from a Falling of any foreign ſolid or fluid Body into the Aſpera Arteria, thro' the Aperture of the Glottis: These Accidents are very terrible, and often fatal, by inducing a ſudden Suffocation, memorable Inſtances of which are found in *Marcelli Donati Hiſt. Med. Mirab. Lib.* 3. *cap.* 7. To this Species of Coughs, belong thoſe produced by Tumors, Stones, and other preternatural Things, adhering to the Aſpera Arteria and Bronchia. Hence Authors, of undoubted Veracity, aſſure us, that Stones, and other ſmall Bodies, like Hail, have been thrown up in Coughing. See *Alexander Trallian*, in *Lib.* 5. *Paulus Ægineta*, *Lib.* 3. *Cap.* 28 and 31. and *Pet. Borelli*, in *Obſ Cent.* 1. *Obſ.* 67.

Nor are we to conſider thoſe Coughs, which are produced by the Fumes of Lead, Metals, and, eſpecially of acid Minerals long inſpired with the Air; to which the Diggers and Refiners of Metals, Potters, who uſe much Litharge, Maſons, and thoſe who deal much in Quick-lime, are principally ſubject, ſince theſe Coughs are eaſily accounted for; becauſe, when the metallic, and almoſt corroſive Particles, enter the Ducts ſubſervient to Reſpiration, and poſſeſſed of an exquiſite Senſibility, they inſinuate themſelves intimately into them, and conſtrict them violently, which proves the Cauſe of a dry Cough, complicated with an Aſthma.

Nor does that ſlight and ſhort Cough, which, in Perſons otherwiſe found, is produced by a Suppreſſion of Tranſpiration, come under our Conſideration. Coughs of this Kind are produced, when Perſons, eſpecially of pituitous Habits, ſuddenly expoſe their Heads or Breaſts, when warm, and under a gentle Perſpiration, to Cold; in conſequence of which the acrid Serum, repelled from the Skin, falls upon the Aſperia Arteria and Bronchia. Coughs of this Kind are, alſo, produced, in old Perſons, when they ſleep in cold Places, eſpecially in the Night-time; or freely expoſe themſelves to a cold and Winter Air: This Species of Cough is, alſo, a Concomitant of a Coryza; and is ſoon cured, either by keeping warm, or, perhaps, more expeditiouſly, by the Exhibition of proper Diaphoretics. To this Species of Diſorders, alſo, belongs the Falling of the Mucus from the Noſtrils to the Fauces and Larynx: But this Mucus is, however, eaſily expectorated in the Morning.

But we ſhall treat, at greater Length, of that Cough *which is* a primary Diſorder, violently affects the whole Body, and racks the Patient, not only by its Vehemence, but, alſo, by its long Continuance: This we call a a rheumatic Cough; for it has for its Cauſe an inverted Motion of the Humours, from the Circumference of the Body to the Lungs, and a Congeſtion of them therein. Nor is it ever free from Horripilations, and febrile Commotions, principally obſervable towards the Evening. This Species of Cough is either dry or moiſt, according to the Habit of the Patient. The moiſt Species is incident to ſanguineous and phlegmatic Perſons; to Perſons whoſe nervous, fibrous, and muſcular Parts, are ſoft; to thoſe who abound with ſerous and pituitous Juices, ſuch as Women rather than Men; and Infants, Children, and old Perſons, rather than young and adult Perſons: But the dry Cough is more incident to hypochondriac, ſcorbutic, and cachectic Perſons; to ſuch as are of a rigid Habit of Body; to thoſe who have a weak nervous Syſtem, diſpoſed to ſpaſmodic Motions; and to ſuch as abound with an acrid Serum.

The higheſt Degree of a rheumatic Cough is called a convulſive or Chin-cough. This rages with ſuch unbounded Fury, and agitates the Patient with ſuch Concuſſions, that he frequently ſeems to be in Danger of a Suffocation. Sometimes, eſpecially in the Beginning, it is dry; and none, or at moſt a very ſmall Quantity of thin Serum, more or leſs acrid, is expectorated: At other times it is moiſt; and then, after violent Efforts, a ſublivid, and often an highly tenacious Mucus is expectorated. Under this Species of Cough the Patient's Extremities become cold; he is coſtive, diſcharges thin Urine, and his vital Juices, being too copiouſly and impetuouſly conveyed to his ſuperior Parts, fill his Head and Breaſt: Hence, under the Paroxyſm, his Face is red, his Veins tumid, and his Pulſe ſtrong and quick; his Eyes are prominent, and diſcharge Tears; his Eye-lids ſwell, and ſometimes, when he ſneezes, the Blood burſts from his Noſtrils. Sometimes, alſo, the ſmall Veſſels of the Lungs are ruptured, and a Spitting of Blood ſucceeds. This Species of Cough is frequently accompanied with an Hiccup, and troubleſome Vomitings; ſome Patients involuntarily diſcharge their Fæces and Urine; and others, eſpecially Children, in coughing, contract Herniæ; or, according to *Hippocrates in Aph.* 46. *Sect.* 6. become gibbous. *In M. N. C. Cent.* 1. *Obſ.* 1. we have a memorable Inſtance of one of the Bodies of the Vertebræ of the Back, broken through the Middle, by the Vehemence of a Cough of this Kind. It is, alſo, to be obſerved, that an Apoplexy may be produced by the exceſſive Vehemence of a Cough. And *Boyle* obſerves, that by ſuch a Cough a ſudden Loſs of Memory, as, alſo, a Palſy of the Hands, and other Limbs, were produced.

The material Cauſe of a convulſive, or Chin-cough, reſides in the thin, acrid, and almoſt cauſtic Humour depoſited on the highly ſenſible Coats of the Ducts deſtin'd for Reſpiration. This Humour is either lodged only in the Larynx, and Aſpera Arteria, in which Caſe it produces a continual and ungrateful Titillation of the Fauces; or it is more deeply ſeated in the pulmonary Bronchia; and then it excites the moſt atrocious Efforts of Coughing. This Humour is generated by the acrid and impure Sordes, either not ſufficiently expelled to the Surface of the Body, or repelled by any Cauſe, eſpecially Cold, and conſequently congeſted in the Lungs. Hence we learn, that a Suppreſſion of the Itch, Tineæ, and Achors of the Head, the Gutta Roſacea, as, alſo, a too haſty Conſolidation of Ulcers, or the Repelling of the Gout, are ſucceeded by a Chin-cough: And there is no other Reaſon, why the Meaſles are preceded, accompanied, and ſucceeded with long continued Coughs of this Kind, than that the acrid morbillacious Matter is retired to the Ducts ſubſervient to Reſpiration, and violently vellicates them. See *A. N. C. Dec.* 3. *Obſ.* 11.

A rheumatic and convulſive Cough, ariſing from a common Cauſe, ſome Fault of the Air, for Inſtance, frequently rages epidemically in various Countries. It ſeizes principally in the Au-

tumn

tumn and Winter, eſpecially if the Winter, after a South Wind, and a moderate Warmth, ſuddenly becomes intenſely cold, and nipping North Winds begin to blow. But this Cauſe only excites a rhematic Cough in impure Habits; whilſt in others it only, for the moſt part, produces one of the catarrhous Kind: Hence we generally obſerve, that the Cauſe of theſe epidemic Coughs is an Air replete with pernicious fetid Clouds, or impregnated with other acrid and often poiſonous Particles, the Cauſes, alſo, of exanthematous Fevers; which Particles, when drawn in with the Air, not only produce a violent Cough, but alſo Aphthæ, which render it more intolerable, than it would have otherwiſe been. Beſides, in the Spring theſe ſeveral Coughs ſometimes rage epidemically, and are accompanied with an Hoarſeneſs; and at this Seaſon they derive their Origin from the ſaline and acrid Exhalations contained in the Air, by the Heat of the Sun raiſed from the Earth after Winter, and inſinuating themſelves through the Glands of the Ducts ſubſervient to Reſpiration. See *Hippocr. Epidem. Lib. 6. Sect. 8. Sennertus de Febribus, Lib 4. Cap. 17. Sydenhami Opera.*

Let this ſuffice, with reſpect to the higheſt Degree of a rheumatic Cough, the Cauſes of which are generally external. But there are other Coughs, which are more properly called rheumatic, which proceed from an internal Cauſe, and which are not only long protracted, but, alſo, very uneaſy to the Patient, ſince they are complicated with rheumatic Pains of the Breaſt and Head, Hemicranias, Tooth-achs, Punctures of the Sides reſembling a Pleuriſy, and Defluxions of an acrid Matter from the Head to the Fauces. Coughs of this Kind are principally incident to cachectic and ſcorbutic Conſtitutions, in conſequence of a Suppreſſion of œdematous Swellings of the Feet, or any other Tumors: And this prepoſterous Practice brings on ſo violent a Cough, and Difficulty of Breathing, that the miſerable Patient ſeems to be in Danger of being ſuffocated. Coughs of this Kind are very common in old Perſons, who abound with impure Juices; and in ſuch Patients it is produced by external Cold, admitted principally to that Region of the Back, where the firſt Vertebra of the Loins, and greater Meſenteric Plexus of Nerves, are found; nor is it owing to any other Cauſe than a Conveyance of the acrid Serum from the external Parts of the Body to the Lungs. This Species of Cough, in pituitous and old Patients, who live delicately, uſe a ſedentary Life, and have neglected uſual Veneſection, is frequently of the moiſt Kind, and produces a critical Effect; ſince by its means the whole Maſs of Blood and Humours, though not without conſiderable Uneaſineſs, is excellently purged from the Redundance of impure Serum; ſo that when the Cough is removed, the natural Strength returns, and the Sleep, Appetite, and perfect Health, are reſtored.

To the Claſs of rheumatic Coughs, alſo, belong thoſe of the ſtomachic and hypocondriac Kinds: The Cauſe of the former of which is lodged in the Stomach; and that of the latter, deeper in the Hypochondria and Inteſtines: And both theſe Species of Coughs are produced, partly by a Conſent of the Nerves, and partly by a rheumatic Defluxion of Serum on the Lungs. The ſtomachic Cough diſcovers itſelf by peculiar Signs, which are a Nauſea, a Cardialgia, a Loſs of Appetite, a defective Digeſtion, a Senſe of Weight in the Stomach: And the firſt Stimulus to Coughing is perceived about the Pit of the Stomach. The hypochondriac Cough, on the contrary, is accompanied with Flatulences, Spaſms of the Inteſtines, and the other hypochondriac Symptoms. The ſtomachic Cough is produced by a bilious, acrid, and acid Sordes, which is lodged in the Stomach, eſpecially in its ſuperior Orifice, and in the Oeſophagus, and which vellicates the nervous Coats of theſe Parts, which are cloſely connected with the Ducts ſubſervient to Reſpiration. Hence this Species of Cough is accompanied with frequent Vomiting. It is moſt troubleſome, when the Stomach is empty, and is familiar to thoſe labouring under a Tertian, eſpecially of the continual Kind, as we are informed by *Hippocrates in Epidem. Lib.* 2. The hypochondriac Cough is produced by thick, impure, and ſerous Humours, by the Force of Spaſms, and abdominal Flatulences, conveyed to the Breaſt and Lungs; and it is the more violent, if an exceſſive Cold, or the Influence of exhorbitant Paſſions, have preceded, as the occaſional Cauſes. But it is to be obſerved in general, that every periodic Cough derives its Origin from Sordes lodged in the Stomach, or rather in the Duodanum.

We muſt, alſo, conſider an habitual Cough, which may be juſtly called one of the catarrhous and rheumatic Kind. This Species principally depends on a Relaxation of the Glands ſituated in the Fauces, Palate, and Larynx, and is protracted for many Years with a continual Expectoration. It is accompanied with a defective Digeſtion, and a ſucceſſive Conſumption of the whole Body. It is incident to ſerous Patients, to thoſe who lead a ſedentary Life, and to ſuch as are addicted to Lucubrations, and drinking of Wines.

As for the Prognoſtics of Coughs, a dry Cough generally paſſes into one of the moiſt Kind, which, when of long ſtanding, becomes habitual, ſpoils the Digeſtion, and induces a cachectic State, and a ſlow Fever. A moiſt Cough, paſſing into one of the dry Kind, and leaving a Senſe of Weight in the Breaſt, ſubjects the Patient to the Danger of a putrid or an hectic Fever, according to *Lommius, in Obſerv. Medicin. Lib.* 2. Convulſive and Chin-coughs are dangerous in Infants, becauſe they eaſily induce a Suffocation, eſpecially in difficult Dentition, and the Meaſles. In Children they produce Diſtortions of the Back, and Hernias; in pregnant Women, Abortion; and in Adults, a Spitting of Blood, and a Phthiſis. That Coughs of this Kind are, alſo, ſometimes productive of a ſudden Suffocation, we are inform'd by *Willis, in Pharmaceutic. p.* 2. *Sect. 1. Cap. 6.* and *Hildanus, Cent. 2. Obſ. 68* Coughs ſucceeding a Scirrhus of the Lungs, or any other of the Viſcera, are generally incurable by any Remedies whatever. And thoſe Coughs which are produced by a Repulſion of exanthematous Eruptions, ceaſe when theſe Eruptions are again recalled. *Lommius*, in the Part above quoted, informs us, "That all Coughs, which deprive "the Patient of Sleep, are bad; and that ſuch as are long-"continued, frequent, violent, and accompanied with a De-"fluxion, that is, habitual, rheumatic Coughs, are productive "of bad Effects." Coughs happening to dropſical Patients, are bad Signs, according to *Hippocrates* in *Sect. 6. Aphor.* 35. On the contrary, a moderate Heat in the Night, an equable Sweat or Moiſture over all the Body, a copious Diſcharge of Urine, a due Solubility of Body, tranquil Sleep, and an eaſy Expectoration, are ſure Signs, that the Cough is in a fair Way of being removed.

The Cure.

In the Cure of a rheumatic Cough, four Intentions are to be purſued: For, in the firſt Place, we are to correct the peccant Matter, diſpoſed for Elimination, and, if neceſſary, promote Expectoration. Secondly, we are to derive the Afflux of the Serum from the Præcordia, and invite it to other more proper Emunctories. Thirdly, we are to check the exorbitant Commotions of the Body. And, fourthly, we are to reſtore Strength to the weakened Parts.

If, therefore, the Bronchia are obſtructed by a tenacious, coagulated Mucus, that Mucus is to be incided, reſolved, and ſoftened. This Intention is excellently anſwered by the reſolvent Roots; the beſt of which are, the Root of Florentine Orris; the Root or Fecula of Arum; and, what is very powerful in luſing tough and tenacious Humours, and procuring Expectoration, five of ſix Grains of Squill-root, exhibited with a little Nitre, as alſo Oxymel of Squills, Eſſence of Gum Ammoniac, aniſated Spirit of Sal Ammoniac, Milk and Flowers of Sulphur, and Sperma Ceti.

An highly thin, acrid and ſaline Humour is diſpoſed for Elimination, by incraſſating Medicines, and ſuch as correct the Acrimony of the Lymph. Theſe Intentions are excellently anſwer'd by Decoctions prepared of Barley, Shavings of Hartſhorn, Roots of Vipers-graſs, and Liquorice; by Cremor of Barley and Water Gruel, prepared with ſweet Almonds, and Currants; by a Decoction of Turneps, prepared with Sugar; by Jellies of the Horns of Deer, and other Animals; by Broths prepared of Fleſhes and Milk; by Lobochs of the Lungs of Foxes; by the Syrups of Poppies, Colts-foot, and Mountain Diacodium; by Sperma Ceti exhibited with Milk; and, above all, by Oil of ſweet Almonds recently expreſſed without Fire, and exhibited either alone, or with Syrup of Maiden-hair, or Julap of Roſes. Thus,

> Take of the Oil of ſweet Almonds, and of the Syrup of Maiden-hair, each one Ounce; of Sperma Ceti, three Drams; and of Saffron, fifteen Grains: Mix all together, and exhibit.

The ſame Intention is, alſo, excellently anſwered by Infuſions of Paul's Betony and Hyſſop; the Flowers of Mallows, Elder, red Poppies, Sage and Daiſies; the Roots of Liquorice; the Seeds of Fennel; and the Bark of Saſſafras. When a catarrhous Cough is become habitual, and accompanied with Loſs of Appetite, and a Conſumption, the Cure is to be attempted by Aſſes Milk, or Whey, or the *Selteran* Waters, mixed with an equal Quantity of Milk.

When there is too great a Congeſtion, Afflux, and Defluxion of Serum in the Breaſt, as happens in a very moiſt, pituitous and long-protracted Cough, it is expedient to derive this Serum from the Præcordia and pulmonary Veſſels, partly by the Anus, the proper Emunctory of mucous Sordes, and partly by the Skin, the proper Outlet of the thinner and more ſubtle Humours. As in all Coughs, ſo more eſpecially in thoſe of the convulſive and rheumatic Kind, a due Solubility of Body is of great Advantage, for procuring which, correcting the Acrimony, and mildly, though copiouſly, and, without any Trouble or Loſs of Strength, evacuating the ſerous Sordes, I have found none of all the Laxitives more effectual than Manna, two Ounces of which may be exhibited in ſome proper Infuſion or Decoction, and the Doſe repeated as the Situation of the Patient requires. I generally diſſolve two Ounces of it in eight Ounces of the Water of Paul's Betony, or the Flowers of the *Egyptian* Thorn, with a gentle Heat, adding afterwards one Dram of the *Terra ſoluta*

foliata Tartari, and a few Drops of the Oils of Cedar, Aniſe, or Mace. *Gabelchoverus*, alſo, in *Cent.* 4. *Obſ.* 7. recommends ſeveral Ounces of Manna to be exhibited for the ſucceſsful Cure of Coughs. The ſame Laxative may, alſo, be exhibited in an Infuſion of Paul's Betony, or in Milk. This Intention is, alſo, anſwered by ſolutive Syrup of Roſes, recently extracted Caſſia, the laxative Decoctions, and Raiſins impregnated with Rhubarb. And if the Stomach cannot bear theſe Laxatives, the redundant Serum and Mucus are, by Clyſters, to be evacuated through their proper Emunctory, which is principally in the large Inteſtines.

By reſtoring the equal Circulation of the Blood through the whole Body, and eſpecially by inviting the Serum to the ſubcutaneous Glands, its Afflux to the Præcordia is prevented. This Intention is anſwered by warm pectoral Infuſions of the Flowers of Mallows and Violets, the Leaves of Hyſſop and Sage, the Seeds of Fennel and Aniſe, and Cinnamon. Theſe Infuſions are to be drank in the Morning in Bed, obſerving a proper Regimen, and keeping the Body always in an equal Heat. The ſame Intention is, alſo, anſwered by the diaphoretic and bezoardic Powders prepared of Crabs-eyes, the Pulvis Marchionis, prepared Amber, diaphoretic Antimony, or, in its ſtead, *Poterius*'s Antihectic, uncalcin'd Hartſhorn, and Cinnabar, with the Addition of a few Grains of the expreſs'd Oil of Nutmegs, or of the Oil of Saffron. To theſe Powders we may, alſo, add Flowers of Sulphur, if the Cough is produced by a Retropulſion of Achors, or an Itch.

The third Intention is to check the exorbitant Commotions of the Body; which is to be attempted in the very Beginning, for fear of greater Danger. Among the Remedies anſwering this End, the beſt is Saffron, which is highly friendly to the Breaſt, and its Extract with the bezoardic Powders. Some, alſo, order Oak-moſs to be added both to the Powders, and to the Decoctions. The ſame Intention is, alſo, anſwered by the *Pilulæ de Styrace* mix'd with the *Pilulæ Alocphangingæ*, and exhibited in the Evening, ordering at the ſame Time Expectorants; ſuch as Oil of ſweet Almonds, and Sperma Ceti. This End is, alſo, anſwered by the anodyne mineral Liquor, or the Liquid Laudanum of *Sydenham*, united with Spirit of Hartſhorn, ſo much extol'd by *Boyle*. If the Diſorder does not yield to theſe, we are to have recourſe to more powerful Anodynes, ſuch as the Pilulæ de Styrace, the Pilulæ Starckeyanæ, the Pilulæ Wildeganſii, and Preparations of the Theriaca.

Nor for allaying the Vehemency of a Cough are we to condemn Topics; ſince, in a Cough of the phthiſical Kind, great Relief is afforded by applying the Emplaſtrum Diaſulphuris Rulandi to the Breaſt. In a convulſive, or Chin-cough, excellent Effects are produced by anointing the Præcordia with the Unguentum potabile rubrum, mixed with Spirit of Wine. The anointing the Sides of the Thorax with the pectoral Ointment in the Pharmacopœia Auguſtana, is of great Efficacy in allaying Coughs, mitigating Pains of the Breaſt, and promoting Expectoration. In all rheumatic Coughs I have, from long Experience, found the following Plaiſter very beneficial.

> Take of the beſt Myrrh, Bdellium, and Amber, each half an Ounce; of Sperma Ceti, human Fat, Wax, and red Lead, each two Ounces; of *Venice* Soap, three Drams; of Saffron, one Dram; and of Camphire, half a Dram: Mix for a Plaiſter to be applied to the Breaſt, Neck, and Spine of Back.

In the Decline of the Diſeaſe, the fourth Intention is to be purſued, and the weakened Parts corroborated, becauſe Coughs eaſily recur. For this Purpoſe I recommend the Eſſence of Amber, and the Spirit of Hartſhorn mixed with Tincture of Tartar, or the anodyne Liquor; with the Addition of a few Drops of the Oil of Saſſafras-wood; as, alſo, the Eſſence of Cafcarilla. I have often obſerved happy Effects produced by a few Drops of the Balſam of Life, exhibited with Extract or Tincture of Saffron. In the End of the Diſorder, in order to corroborate the Stomach, I generally preſcribe the following Electuary:

> Take of the Conſerve of red Roſes, two Ounces; of the the Conſerve of Rolemary, one Ounce; of prepared Amber and Nutmegs, each three Drams; and of the Syrup of Citron or Orange-peel, a ſufficient Quantity.

Crato, in *Lib.* 37. *Conſil.* extols Amber with a Decoction of Raiſins, and very juſtly, ſince that Medicine is poſſeſſed of a corroborative, and, at the ſame time, of a laxative Virtue. But the genuine Eſſence of Amber is far preferable to Amber itſelf. The Stomach is, alſo, excellently corroborated by old and generous *Falernian* Wine, which the Antients, and eſpecially *Pliny*, greatly extoled. *Hippocrates*, in *Lib. de Victu Acutorum*, greatly recommends the Uſe of ſweet Wine for old Perſons. Water of Paul's Betony, and of Hyſſop diſtilled with Wine, and edulcorated, adding a little Saffron, is very proper for the ſame Purpoſe. In order to ſtrengthen the Glands of the Fauces and Bronchia, from which the Humour continually falls down to the Larynx, and Aſpera Arteria, I have always, with great Succeſs, ſprinkled upon the Head a Powder prepared of Amber, Benjamin, Maſtich, Flowers of Roman Chamomile, and Clove-gilly-flowers. The Mouth is, alſo, to be frequently gargariſed either with *French* Brandy, or with a Decoction of Sage, Hyſſop, and Red-roſe-flowers, in Wine.

In preventing and curing Coughs of all Kinds, a proper Regimen is of the laſt Importance. The Air, then, ought to be neither too cold, nor too hot; but in ſuch a State as to preſerve the Body in a perpetual breathing Sweat. The Night Air is particularly hurtful, and bad Effects are produced by cold, cloudy, and rainy Weather; as, alſo, by exceſſive Heat; but, moſt of all, by Northerly Winds. Thoſe who are frequently ſubject to Coughs and Catarrhs, ought to abſtain from ſuch Aliments as are high-ſalted, indurated in the Smoak, too ſtrongly ſeaſon'd with Aromatics, as, alſo, ſuch as are acid and auſtere; becauſe theſe render the Blood, and its Serum, acrimonious and impure. They are, alſo, to have a due Regard to what they drink; for no Malt Liquor is proper, and much leſs acid Wine. For Drink, ſuch Perſons ought rather to uſe Barley-water, or Ptiſan, or a Decoction prepared of the *China* Root, Raiſins, and the Roots of Vipers-graſs, or Hydromel, which *Gabelchoverus* orders in the following Manner:

> Take of deſpumated Honey, four Ounces; of Spring Water, three Quarts; of Liquorice, five Drams; ſix Figs; of the Seeds of Fennel, and Roots of Burnet, each two Drams; of the Flowers of Mallows, one Handful; of the Flowers of Sage, and Violets, each one Pugil; and of Cinnamon, two Scruples: Mix, and boil to the Conſumption of half a Quart.

Scorbutic Patients, afflicted with a Cough, may, for Drink, uſe pure Spring-water, not too cold, either alone, or corrected with ſweet Almonds, or fine Wheaten Bread. The common People, with great Succeſs, in violent epidemical Coughs, pour boiling Water upon the Bran of Wheat, and drink the Infuſion when cold.

The Prevention of Coughs, in a great meaſure, depends upon a proper Uſe of the Non-naturals. Thoſe Perſons who, when recovering from a Cough, drink Wine, expoſe themſelves to the Cold, or indulge themſelves in exorbitant Paſſions, are forthwith ſeized with a more violent Cough, than that which they before laboured under. Old Perſons ought to guard againſt Cold of the Feet, and eſpecially of the Back; and becauſe in the Winter rheumatic Diſorders are eaſily contracted, the Head, the Neck, and the Regions of the Præcordia and Loins, as, alſo, the Feet, in old Perſons, who are ſubject to a Cough, are to be carefully fortified againſt the Cold with warm Linen and Cotton, in order to preſerve a moderate and equal Perſpiration; for when any one of theſe nervous Parts is affected and penetrated by the Cold, eſpecially by Northerly Winds, all the reſt, in conſequence of their mutual Conſent, are preternaturally affected. It is, alſo, neceſſary to keep the Body ſufficiently ſoluble, and the Perſpiration free; for which Purpoſe moderate, but frequent Exerciſe is healthy during fine Weather. Thoſe who are plethoric, ought at ſtated Times, and eſpecially about the Equinoxes, to uſe Veneſection, or Scarification. When the Cough is epidemical, we ought to guard againſt its Tyranny by a proper Regimen of light Aliments, and preſerving the Excretions free and uninterupted.

In all Coughs we are to deal cautiouſly with Expectorants, ſweet Subſtances, and incraſſating Decoctions; leſt, as is cuſtomary among the common People, by exhibiting theſe alone, and in too large Quantities, we ſhould ſtill farther relax the Lungs, and excite a greater Afflux of Humours to them. And in ſtomachic and hypochondriac Coughs, we ought totally to abſtain from ſuch Medicines, becauſe they ſpoil the Digeſtion, and by that means pave the Way for a Cachexy and Dropſy.

A Chin-cough, ariſing from a Retropulſion of exanthematous Eruptions, indicates the recalling of the peccant Matter to the Surface of the Body. For this Purpoſe nothing is more effectual than Æthiops Mineral, or Flowers of Sulphur internally exhibited with diaphoretic Antimony, or the bezoardic Powder, eſpecially at Night: Nor, beſides Frictions, and Bathing of the Feet, is there a more effectual Remedy for drawing the Serum from the Breaſt, than Veſicatories; provided the Delicacy of the Age would but permit their Uſe. In the Chin-coughs of Children it is of conſiderable Service to anoint the Soles of the Feet with Hogs-lard.

In Coughs ariſing from a Repreſſion of œdematous Tumours of the Feet, beſides Clyſters, inciding and diaphoretic Medicines, and ſuch as derive the Motion of the Humours from the Breaſt, gentle Diuretics are of ſingular Service; ſuch as the Tincture of Tartar, the tartarited Tincture of Amber, and the viſceral Elixir mixed with the pectoral Elixir. But acrid ſaline Subſtances, and draſtic Diuretics, are not to be uſed, becauſe

they carry off the ſweet Serum; whereas the others carry off the acrid Serum through the urinary Paſſages.

I have frequently ſeen a long-continued Cough, ariſing from a ſcorbutic State of the Blood and Humours, cured by an internal Exhibition of Whey and Powders prepared of Crabs-eyes, the Pulvis Marchionis, prepared Amber, diaphoretic Antimony, Extract of Saffron, and the aqueous Extract of Caſcarilla, interpoſing a Laxative of Rhubarb, and ordering for common Drink cold Water, corrected with ſweet Almonds; or the *Selteran* Waters, mixed with *Moſelle* Wine; or a Decoction with Water of ſuch temperate Species as have a Tendency to depurate and ſweeten the Blood. I have, alſo, towards the Evening, exhibited the Pilulæ Aloephanginæ, mixed with the Pilulæ de Styrace, and ordered the Application of the above-deſcribed Plaiſter to the Breaſt.

If the Cough is excited by the acid and bilious Sordes in the Stomach, nothing is more efficacious than Abſorbents; ſuch as Crabs-eyes, and prepared Amber mixed with the Arcanum duplicatum, with the Addition of a few Drops of the Oil of Mace: To theſe we are, alſo, to join mild Laxatives prepared of Manna and Rhubarb. The ſtomachic Cough of Children is removed by a gentle Emetic, if nothing contraindicates that Practice.

In a Cough ariſing from an Obſtruction of the Viſcera of the Abdomen, which is called an hypochondriac Cough, thoſe Medicines are moſt proper, which recal the ſuppreſs'd Excretions of Blood. Happy Effects are, alſo, produced by Antiſpaſmodics, and bathing the Feet: But nothing is ſo effectual as tepid mineral Waters, mixed with Goats, or rather Aſſes, Milk, and drank with a proper Regimen.

A long-continued Cough, tending to a Conſumption, is moſt effectually cured by Aſſes Milk, provided the Body is duly prepared for drinking it: And this Method of Cure ſucceeds beſt, if long Journies, Changes of Air, and Corroboratives, are joined with it: Nor, if the Cough is very moiſt, has any thing a more happy Influence, than a proper Abſtinence from Aliments, eſpecially from Fleſh.

It is always expedient to mix Anodynes, ſuch as the Pilulæ de Cynogloſſo, and the Pilulæ de Styrace, with equal Quantities of Laxatives, ſuch as the Pilulæ Aloephanginæ, or the Pilulæ Cratonis de Succino, and to exhibit them in Conjunction at Bed-time; for when Anodynes are exhibited alone, I have obſerved, that the Cough is ſuppreſs'd, and an Aſthma produced by a too great Congeſtion of Humours, and a Weight about the Breaſt.

As an intenſe Cold, ſo alſo an exceſſive Heat, is prejudicial to Perſons afflicted with a Cough. Hence Infuſions, if exceſſively hot, exaſperate the Cough; for which Reaſon all the Liquors the Patient drinks ought to be only tepid.

Veneſections are beneficial to plethoric Perſons, whoſe Veins are tumid and prominent, like Cords; or who have their Excretions ſuppreſſed: They are, alſo, an excellent Preſervative even in old Perſons paſt the ſeventieth Year of their Age; nor can we be without Veneſection, when the convulſive Cough is ſo intolerably violent, that in Children, and young Perſons, a Rupture of ſome of the Veſſels is to be dreaded from it. *Sydenham* affirms, that he cured a Cough of the convulſive epidemic Kind, only by Veneſection, repeated Purging, and Veſicatories.

Celſus, in *Lib.* 4. *Cap.* 4. when treating of the Cure of a Cough, gives the following Directions: "The Patient is to drink "a Decoction of Hyſſop every other Day, and read with "a loud Voice, which is firſt hindered by the Cough, but "the Reading afterwards overcomes the Cough; then the "Patient muſt walk, uſe Exerciſe, and long-continued Frictions of "his Breaſt; then he is to eat fat Figs. In a moiſt Cough, ſtrong "Frictions, eſpecially of the Head, with hot Subſtances, are "beneficial: A poach'd Egg may, alſo, be exhibited, with the "Addition of a little Sulphur; and for Drink he is to uſe tepid "Water." And I muſt own, I am of Opinion, that it is beſt to follow the Advice of *Galen* in curing a Cough, who tells us, that we are to preſcribe Things light, ſimple, and moſt familiar to Nature, rather than compound active Medicines, prepared in the Shop. Thus I remember, among the common People, to have ſeen an obſtinate chronical Cough, not only alleviated, but, alſo, totally removed, by a Decoction of dried Turneps; or of the Stalks of red Colewort; or of the Bran of Wheat, mixed with Sugar. If the Matter of the Fluxion is thin, copious, and acrid, which is known from the Redneſs of the Eyes, the Titillation and Senſe of Biting in the Throat, and the ſaltiſh Taſte in the Mouth, the Juice of *Spaniſh* Liquorice, deſpumated Honey, an inſpiſſated Maſs conſiſting of Jelly of Hartſhorn, and Decoction of Liquorice, and Oil of ſweet Almonds, mixed with Syrup of Poppies, and gradually ſwallowed, afford immediate Relief. No leſs common and excellent a Remedy, is the Yolk of a new-laid Egg, mixed with Sugar-candy and Saffron, drinking after it a Diſh or two of Bohea Tea; as, alſo, freſh Butter, with Sugar and Milk, with an Infuſion of Paul's Betony, and the Flowers of red Poppies.

When the Epiglottis, the firſt and primary Inſtrument of the Voice, is ſo relaxed, and deprived of its Tone, that the Voice becomes hoarſe, it is expedient frequently to gargarize the Mouth with a Gargariſm prepared of nervous Ingredients; ſuch as the Flowers of Roſemary, Lavender, and common Chamomile, the Tops of Thyme and Origanum, Sage and Myrrh, boiled in Wine: Externally I uſe, with great Succeſs, to apply to the Larynx a Bag conſiſting of the above-mentioned Ingredients, with an Addition of Amber and Styrax Calamita. *Hippocrates*, in *Lib. de Victu Acutorum*, would not have hoarſe Perſons purged; but rather choſe to cure the Coldneſs and Moiſture of their Conſtitutions, by drying their Heads, and the other Parts affected, by the Uſe of Topics. *Hoffman.*

In 1675, the Seaſon having continued unuſually warm, like Summer, till towards the End of *October*, and being ſuddenly ſucceeded by cold and moiſt Weather, a Cough became more frequent, than I remember to have known it at any other Time; for it ſcarce ſuffered any one to eſcape, of whatever Age or Conſtitution he were, and ſeized whole Families at once; nor was it remarkable only for the Numbers it attacked, (for every Winter abundance of Perſons are afflicted with a Cough) but, alſo, on account of the Danger that attended it. For as the Conſtitution both now, and during the preceeding Autumn, eminently tended to produce the epidemic Fever, and as there was now no other Epidemic exiſting, which by its Oppoſition might, in ſome meaſure, leſſen its Violence, the Cough made Way for, and readily changed into, the Fever. In the mean while, as the Cough aſſiſted the Conſtitution in producing the Fever, ſo the Fever on this Account attacked the Lungs and Pleura, juſt as it had affected the Head even the Week preceding this Cough; which ſudden Alteration of the Symptoms occaſioned ſome, for want of ſufficient Attention, to eſteem this Fever an eſſential Pleuriſy or Peripneumony, though it remained the ſame as it had been during this Conſtitution.

For it began now, as it always did, with a Pain in the Head, Back, and ſome of the Limbs; which were the Symptoms of every Fever of this Conſtitution, except only that the febrile Matter, when it was copiouſly depoſited in the Lungs and Pleura, through the Violence of the Cough, occaſion'd ſuch Symptoms as belong to thoſe Parts. But nevertheleſs, as far as I could obſerve, the Fever was preciſely the ſame with that which prevailed to the Day when theſe Coughs firſt appeared; and this, alſo, the Remedies, to which it readily yielded plainly, ſhewed. And tho' the pungent Pain of the Side, the Difficulty of breathing, the Colour of the Blood that was taken away, and the reſt of the Symptoms that are uſual in a Pleuriſy, ſeemed to intimate, that it was an eſſential Pleuriſy; yet this Diſeaſe required no other Method of Cure, than that which agreed with the Fever of this Conſtitution, and did no ways admit of that which was proper in the true Pleuriſy. Add to this, that when the Pleuriſy is the original Diſeaſe, it uſually ariſes betwixt Spring and Summer; whereas the Diſtemper we now treat of, began at a very different Time, and is only to be reckoned a Symptom of the Fever which was peculiar to the preſent Year, and the Effect of an accidental Cough.

Now, in order to proceed in a proper manner to the particular Method of Cure, which Experience ſhews to be requiſite both in this Cough, and in thoſe which happen in other Years, provided they proceed from the ſame Cauſes, it is to be obſerved, that the Effluvia, which uſed to be expelled the Maſs of Blood by inſenſible Perſpiration, are ſtruck in, and thrown upon the Lungs, from the Stoppage of the Pores by Cold; and, by irritating the Lungs, immediately raiſe a Cough. And the hot and excrementitious Exhalations being by this means detained in the Habit, a Fever is eaſily raiſed in the Maſs of Blood, when either the Vapours are ſo copious, that the Lungs are unable to expel them, or the Inflammation is increaſed by the adventitious Heat ariſing from the Uſe of over-heating Remedies, or too hot a Regimen, ſo as ſuddenly to cauſe a Fever in a Perſon who was already too much diſpoſed to this Diſeaſe. But of whatever Kind the Stationary Fever be which prevails the ſame Year, and at that particular Time, this new Fever ſoon aſſumes its Nature, and becomes of the ſame Kind, and is every-where ſubſervient thereto; tho' it may ſtill retain ſome Symptoms belonging to the Cough, whence it aroſe. In every Cough, therefore, proceeding from this Cauſe, 'tis ſufficiently apparent, that Regard muſt not only be had to the Cough, but, alſo, to the Fever that ſo readily accompanies it.

Relying on this Foundation, I endeavoured to relieve ſuch as required my Aſſiſtance by the following Method: If the Cough had not yet occaſioned a Fever, and other Symptoms, which, as we ſaid, uſually accompany it, I judged it ſufficient to forbid the Uſe of Fleſh-meats, and all Kinds of ſpirituous Liquors; and adviſed moderate Exerciſe, and the Benefit of the open Air, with a Draught of a cooling Pectoral Piſan, to be taken between whiles. Theſe few Things ſufficed to relieve the Cough, and prevent the Fever, and other Symproms, uſually attending it. For by the Abſtinence from Fleſh, and ſpirituous Liquors, along with the Uſe of cooling Medicines, the Blood was ſo cooled, as not eaſily to admit of a febrile Impreſſion; and by means of Exerciſe thoſe hot Effluvia of the Blood, which ſtrike in, and occaſion a Cough, as often as the Pores are ſtopt by ſudden Cold, are commodiouſly

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modiouſly exhaled in the natural and true Way, with Advantage to the Patient. *Sydenham.*

TUTENAG. Spelter, or Zink.

TUTIA. Tutty. See CADMIA.

TYLLI GRANA. The Seeds of the leſſer *Ricinus*. *Caſtellus*, from *Gregor. Hymman.*

TYLOMA, Τύλωμα. A *Callus.*

TYMPANIAS. Τυμπανίας. The ſame as TYMPANITIS.

TYMPANITES. A Tympany.

In no Part of the human Body are ſo great Diſorders produced by Flatulences, which are nothing but Vapours and Exhalations, poſſeſſed of an expanſive and elaſtic Quality, than in the Cavities of the Stomach and Inteſtines; where being, as it were, pent up in a Priſon, they violently diſtend theſe Canals which are poſſeſſed of Senſation and Motion, deſtroy their Tone, produce great Pain and Anxiety, and by theſe means greatly injure all the ſeveral Functions of the Body.

If the Stomach is preternaturally diſtended by Flatulences, very violent Symptoms are produced, ſuch as intolerable Uneaſineſs about the Præcordia, accompanied with a Difficulty of Breathing, an Oppreſſion of the Breaſt, Inquietude, a Coldneſs of the Extremities, and an uncommon Loſs of Strength. In this State the Patient's Countenance becomes contracted and livid, and ſometimes the Fauces are ſo contracted, as to render Deglutition difficult; and Palpitations of the Heart, Fluſhings, Dimneſs of Sight, Vertigos, and other Symptoms of the like Nature, are brought on. Flatulences of this Kind, are known by a Tumour about the Pit of the Stomach, towards the Right Side, which is often diſcovered by the Touch; as, alſo, by a frequent and violent Eructation, by which the Symptoms are conſiderably mitigated.

The Cauſes of the terrible Symptoms produced by a violent Inflation of the Stomach, are theſe: 'Tis certain from Anatomy, that the Stomach is an highly nervous Part, and that the Ramifications of the eighth and intercoſtal Pairs of Nerves, are copiouſly diſtributed thro' its nervous Coat; and as theſe Ramifications run off to all the nervous Parts of the Body, and ſuch as are ſubſervient to Senſation and Motion, 'tis not to be wondered at, if, in conſequence of this cloſe Communication, violent Diſorders ſhould, alſo, be produced in all the other ſenſible Parts of the Body. And theſe Symptoms are accompanied with an Expanſion of the Stomach, by which the expanſive and conſtrictory Motion of the Diaphragm, on which Reſpiration depends, is hindered. And ſince by theſe means the Cavity of the Thorax is leſſened, the Lungs cannot duly expand themſelves. Hence the free Paſſage of the Blood from one Ventricle of the Heart to the other is obſtructed.

The Inteſtines, which are furniſhed with the ſame Kind of Coats and Ramifications of Nerves and Blood-veſſels, with the Stomach, are, alſo, ſubject to ſimilar flatulent Diſtenſions; and, if the Whole of the large and ſmall Inteſtines are violently diſtended by Flatulences, there is not only a Tumor of the whole Abdomen, but, alſo, a conſiderable Pain, eſpecially about the Navel, where the ſmall Inteſtines are ſituated, accompanied with an obſtinate Coſtiveneſs, Inquietude, Anxiety, Refrigeration of the Extremities, and Loſs of Strength; in which Caſe the Diſorder is called a flatulent Colic. When this Flatulence is not tranſitory, but protracted for ſome Months or Years, an hard Tumor of the Abdomen is produced, which, when ſtruck, ſounds like a Drum, and is for that Reaſon called Tympanites; a Diſorder hardly curable by any Medicines, eſpecially when accompanied with an *Aſcites*, and an Extenuation of the ſuperior Parts.

The proximate Cauſe of theſe Flatulences is twofold; the one, which is material, conſiſts in the eaſy and copious Generation of theſe Flatulences, and is owing to Aliments, eſpecially of a tenacious mucid Kind, and ſuch as are fit for inducing Flatulences, ſuch as Pot-herbs, the ſeveral Species of Radiſh, Peaſe, Beans, dry'd Sea Fiſhes, Summer Fruits, all fermentable and ſweet Aliments, Preparations of Honey, Ale prepared of Wheat, farinaceous and wheaten Aliments; Paps, eſpecially prepared of Millet; and the Fat of Mutton, eſpecially if cold Liquors are drank after them. But it is to be obſerved, that theſe Aliments, whether moiſt or dry, are injurious in proportion to the Quantity taken.

The other, which is the formal Cauſe of theſe Flatulences, conſiſts in a conſiderable Weakneſs of the periſtaltic Motion of the Inteſtines, which depends upon an obſtructed Influx of the nervous Fluid, and arterial Blood, into the Inteſtines, for as this periſtaltic Motion, when in its natural State, not only reſiſts the Vapours generated in the Inteſtines, in conſequence of their Moiſture, but, alſo, without any Trouble, propels and eliminates them, ſo, on the contrary, this Motion, when the Tone and Strength of the Viſcera are weakened, and their Membranes rendered flaccid, becomes incapable of any longer performing its proper Office. Beſides, the Aliments, before they are convey'd to the Inteſtines, remain for a conſiderable Time in the Stomach, and are reſolv'd into Vapours. Hence, in the adjacent *Duodenum* and *Jejunum*, on account of the Acrimony, there is a particular Spaſm produced, which conſtricts the Right Orifice of the Stomach or Pylorus, and by Conſent the Left; ſo that the Vapours cannot be diſcharg'd, but violently exerciſe their elaſtic Force on the nervous Coats of the Stomach; and when this Diſtention is removed by a greater Influx of the nervous Fluid, and the Tone of the Stomach is for a time reſtored, the Flatulences are with great Impetuoſity diſcharged upwards.

As it is ſo, we may eaſily conceive, that whatever depraves the periſtaltic Motion, alſo contributes to the Generation of Flatulences. Hence the Reaſon is obvious, why Men of lax, ſpongeous, and phlegmatic Habits of Body, Women, old Perſons and Infants, are highly ſubject to Flatulences. And becauſe, under an inordinate conſtrictory and dilatatory Motion of the Inteſtines, the Vapours continually generated in the Inteſtines, cannot be freely tranſpir'd, but produce a great deal of Miſchief, we may eaſily underſtand why, by expoſing the Abdomen and Limbs to the Cold, by walking upon cold Floors, immerſing the Hands in cold Water, or drinking cold Liquors when the Body is over-heated in the Summer-time, flatulent Colics, and Gripes of the lower Abdomen, are ſo frequently produced; for all theſe Things have a remarkable Tendency to weaken the Tone of the Inteſtines.

But other more powerful Cauſes, by deſtroying the Tone of the Inteſtines, concur to the Production of Flatulences; for 'tis certain from Experience, that dangerous Inflations of the Abdomen are principally incident to thoſe whoſe Strength is impaired, and their Blood and nervous Fluid impoveriſhed by a previous Diſeaſe; ſuch as a Dyſentery, an acute, a variolous, or a chronical intermittent Fever; exceſſive Hemorrhages, Wounds, the hæmorrhoidal Diſcharge, Abortion, difficult Labours, or an immoderate Evacuation of the Menſes or Lochia, eſpecially if the Patients, without paying a due Regard to their Strength, eat too copiouſly. Hence we may learn, what Judgment is to be form'd, when, as it often happens in acute and dangerous Diſorders, about the critical Times, uneaſy Diſtentions of the Præcordia, accompanied with Rumblings, and a Fluctuation of Flatulences in the lower Abdomen, are perceiv'd; for they are generally a Sign of Death, not only becauſe they indicate an extreme Loſs of Strength, but eſpecially becauſe they in a great meaſure obſtruct Reſpiration. Theſe Inflations of the Abdomen, proceeding from a total Deſtruction of Strength, are by the Liquors and Medicines taken by the Patient, whilſt alive, generally ſo increaſed, that the Abdomen is, by proper Means, to be compreſs'd, for fear it ſhould break.

'Tis, alſo, certain from Experience, that violent and long-continu'd Spaſms of the *Primæ Viæ* are ſucceeded by a want of Tone and a Flaccidity of the Inteſtines, a Weakneſs of their periſtaltic Motion, and violent Inflations. Hence a ſpaſmodic Colic is frequently ſucceeded by one of the flatulent Kind; which, when not rightly treated, and when anodyne Potions are exhibited in order to mitigate the Pain, frequently and eaſily degenerate into a Palſy. For the Illuſtration of this, *Wepfer's* Experiments in *Tr. de Cicuta aquatica*, in order to demonſtrate the Effects of Poiſon, are of ſingular Service; for by exhibiting Arſenic to Dogs, he firſt obſerved violent Vomitings, and ſpaſmodic Contractions of the Stomach. Then the Stomach, becoming flaccid, was afterwards incredibly diſtended by Flatulences. This is, alſo, evinced by diſſecting thoſe who are taken off by any acrid Poiſon, which operates by producing violent Spaſms; for, upon making an Inciſion in their Abdomen, their whole Inteſtines, by means of the Flatulences, burſt forth in ſuch a manner, that there is hardly a Poſſibility of replacing them. From a due Conſideration of what has been ſaid, we may clearly underſtand, why acrid Purgatives, and Emetics, Dyſenteries, and ſpaſmodic and hæmorrhoidal Colics generally leave a remarkable Weakneſs of the *Primæ Viæ*, which greatly tends to produce Inflations of the Abdomen.

It frequently happens, that both Spaſms and Flatulences afflict the Inteſtines; and whilſt the Spaſms contract their Coats, the Flatulences contained in their Cavities, attempt a violent contrary Expanſion. This principally happens, when the flatulent Matter is poſſeſſed of a certain bilious Acrimony, as is obſervable in ſucking Children, who are violently rack'd by Gripes and Rumblings, which diſcover themſelves externally by their vehement Exploſions, whilſt the Faeces of the Patient are green by the Admixture of an acid corroding Subſtance, which, like Aqua Fortis, conſumes fine Linen Cloths. The ſame is, alſo, obſerved, when tenacious mucous Faeces mixed with Bile, and reſembling the Yolk of an Egg, are diſcharged: The thick and mucous Humours, which are in Infants raiſed in a moiſt and mucilaginous Cough, and which, by being ſwallowed, obſtruct the Stomach and Inteſtines, are, alſo, frequently the Cauſe of copious Flatulences, accompanied with Gripes.

Having already conſidered thoſe Flatulences which equally diſtend the whole Inteſtines, we now come to treat of thoſe particular Inflations and Spaſms, which, in the Courſe of our Practice, we have obſerved only to affect certain Parts of the Inteſtines. It is, therefore, to be obſerved, that Diſorders of this Kind are

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principally incident to hypochondriac Patients, and hysteric Women; when, for Instance, the Stomach is inflated without any Expansion of the Intestines. This principally happens, when the Spasm possesses the *Duodenum*, or Beginning of the *Jejunum*. The *Ileum*, also, without any Inflation of the Stomach, and large Intestines, is, in Children afflicted with Worms and *Hernias*, frequently found greatly expanded, and painful towards the Navel. And in hypochondriac Patients, and those labouring under the Hæmorrhoids, when the *Intestinum Rectum*, and inferior Part of the *Colon*, in consequence of the Stagnation of the Blood, and its obstructed Discharge thro' the hæmorrhoidal Veins, are violently constricted, and rendered narrow by the Spasms, the superior Part of the *Colon*, and especially its Flexure in the Left Side, and about the lumbar Region, is greatly expanded. Hence arises a pressory Pain, which is commonly, tho' falsly, ascribed to some Disorder of the Spleen. It sometimes, also, happens, that the Flexure of the *Colon* in the Right Hypochondrium, about the Liver, and Region of the Stomach, is greatly elevated, and produces troublesome Symptoms; the Cause of which is, in my Opinion, lodg'd in the Beginning of the *Colon*, which is situated in the Confines of the *Os Ileum*, the Valves of the *Colon*, and the *Intestinum cæcum*, since this Part of the *Colon* is deprived of its due Tone, and systaltic Motion; in consequence of which the Excrements are forced upwards, a Circumstance which greatly contributes to the Generation of Flatulences; and not only a spasmodic Stricture, and subsequent transitory Inflation seize a certain Portion of the Intestines, and are the Causes of the most violent Symptoms, but, also, a certain Narrowness, Hardness, or Callity, arising from various Causes, affect particular Parts of the Intestines, and, by perverting their whole peristaltic Motion, give Rise to the most violent Symptoms. But Causes of this Kind can be only discovered by dissecting the Patients after their Death. See *Waltheri Dissert. de Angustia Intestinorum.*

We now come to consider that Species of Flatulence, in which there is not a transitory, but a permanent and continual Inflation of the Abdomen, and which is called a Tympanites; which *Celsus*, in *Lib.* 3. *Cap.* 12. defines, "A Tumor and "vehement Distention of the Abdomen, accompanied with "frequent Rumblings, produced by the Motion of the Flatu-"lences." This Disorder discovers itself by the following Signs: For the most part, after a Pain and Tension about the Left lumbar Region, and an obstinate Costiveness, the Abdomen is violently distended. Flatulences and Eructations are now-and then violently discharged upwards: The Pulse is inequal, the Appetite languid, and the Thirst increased; and, about the *Præcordia* and Navel, a tensive, corroding, and punctory Pain, accompanied with a certain Heat, is perceived. The Patient can lie on neither of his Sides, nor does the Tumor ever subside, when he lies on his Back.

The Cause of this continual uneasy and dangerous Inflation of the Stomach and Intestines, is by *Willis*, *Baglivi*, and others of the Moderns, justly asserted to be a spasmodic Stricture of the intestinal Coat, by the long Continuance of which, the Pores and Passages of the Intestines, through which the Vapours transpire, are straitened and obstructed; so that the retained Vapours, by their elastic Force, in consequence of an Admixture of the Air, afterwards produce a violent Distention of the Intestines. And that the genuine Cause of this Disorder consists in such a Stricture, seems to be pretty plainly indicated by *Hippocrates*, in *Aphor.* 11. *Sect.* 4. where we are told, "That those who have Gripes "in the Abdomen, and violent Pains about the Navel and "Loins, which can neither be removed by Medicines, nor any "other Means, fall into a Tympanites, or dry Dropsy."

This Disorder is both by the Antients and Moderns, accounted a Species of Dropsy, because, especially as a Symptom, it is often complicated with an Ascites; whereas, nevertheless, it is absolutely a distinct Disease, and accompanied with no Extravasation of Water in the Abdomen. Thus *Dolæus*, in *Encyclopæd. Lib.* 3. *Cap.* 9 informs us, That in a Girl of nine Years of Age, who died of a Tympanites, he found not one Drop either of Serum or Water in the Abdomen. And in *M. N. C. Decur.* 1. *Annot. Obs.* 85. we have an Account of a Boy who died of a Tympanites; and, upon dissecting his Body, his Stomach was found preternaturally distended with Flatulences, and contained a small Quantity of a viscid Humour: But his whole Intestines were pellucid, and in many Places, when prick'd, collaps'd; without the least Appearance of a single Drop of Water. *Valesius* also, in *Comment. in Lib.* 4. *Hippocrat. de Victus Rat. in acut.* and *Colladus in Adversar. Lib.* 2. *cap.* 40. observes, That, upon the Aperture of a similar Carcase, a very inconsiderable Quantity of Water was discharged; but a gross Flatulence being evacuated, the whole Abdomen suddenly subsided. *Platerus*, also, in *Obs* 53. informs us, that in a Boy who died of a Tympanites, the Intestines were so distended, as in some Places to be as large as a Person's Thigh, and that, being broken by Compression, they discharged the Faeces with a considerable Impetuosity. But in other Parts they were so contorted and wreathed up, that neither the Flatulences, nor the Excrements, could find any Passage downwards. A large Number of oblong Worms were, also, found in his Intestines.

A Tympanites without a Dropsy, is most incident to Women, especially after Labour; when the Lochia are either too scantily discharged, or by Cold, or the Influence of Passion, totally suppressed. The same happens when after Labour, the Abdomen not being duly compressed and swathed, any Error in Regimen is committed; or, when in the Beginning of their Lying-in, the *Primæ Viæ* are not sufficiently purged from their Sordes: For, in these Cases, Women have generally for a long time, an hard and inflated Abdomen, accompanied with considerable Uneasiness, Difficulty of Breathing, Anxiety, and obstinate Costiveness. I have often observed the same Symptoms produced by a difficult Labour, if the Secundines have not been totally removed; or if, in extracting them, the Uterus has beeen wounded. Imprudent Treatment after Abortion also, lays a frequent Foundation for a Tympanites; the Cause of which is, in my Opinion, a perverse and disturbed Motion of the Blood, through the Vessels of the Uterus and Intestines: For if, in consequence of any Disorder of the Uterus, the natural Motion of the Blood, or its critical Excretion, are not duly carried on, by reason of the subsequent Stagnation, the free Circulation of the Blood will be, by Consent of the Parts, hindered thro' the abdominal Viscera, especially through the Intestines, where a Portion of the Blood or Serum remaining distorts and constricts their tender and sensible Fibres, and renders them harder and more tense; so that the Perspiration of the Intestines cannot afterwards be freely and duly carried on. When this happens, the Flatulences are generally rather the Effect than the Cause of the Tympanitis.

These Inflations of the Abdomen are frequently observed in Infants and Children, especially if they are afflicted with Worms; as, also, after the Measles and Small Pox: And unless Misfortunes of this Kind are seasonably encountered with proper Remedies, the superior Parts become extenuated, and an hectic Heat supervening, the Patients die. By the Voracity, also, of Infants and Children, when the Stomach and its Tone are weak, Tumours of this Kind are often produced, and various Causes may concur to their Production; for as the Measles, Small Pox, or a continual Fever, in consequence of the Loss of Strength, and the Exhaustion of the spirituous Fluid, are succeeded by a considerable Weakness of the peristaltic Motion; and since, by reason of the Dyscrasy of the Blood and Humours contracted by the Disease, the Coats of the Intestines and Peritonæum, are spasmodically constricted by an acrid Serum, which hinders the Discharge of the Flatulences, it easily happens that a Tympanites is produced. Sometimes, also, there is an Infarction of the meseraic Glands, and lacteal Vessels, which not transmitting the chylous Juice, accumulates Sordes in the *Primæ Viæ*; and these Sordes are resolved into Flatulences, and partly carried off by Stool.

But not only hysteric Women and Infants, and Children labouring under Worms, or spent by previous Disorders, are subject to a Tympanites; but, also, those who are inclined to that Species of Dropsy called an Ascites: The principal Cause of which seems to be, that in such Patients, where the abdominal Viscera, especially the Liver, do not duly perform their proper Offices, the Bile becomes peccant both in Quantity and Quality, and is therefore deprived of its Qualities necessary for Digestion; for the Bile is a genuine and natural preservative Medicine: For by its alcaline, sulphureous, and saponaceous Principle, it not only promotes the intimate Solution and Digestion of the Aliments; but, also, by its moderately sulphureous and balsamic Bitterness, it gently stimulates and corroborates the Coats of the Intestines; by which means it preserves the peristaltic Motion entire; for when this Motion is perverted or disturbed, the whole Oeconomy of the vital Motions, together with the salutary Excretions, is, also, disturbed and perverted, as we generally observe in hypochondriac Patients.

For the Illustration and Confirmation of this Doctrine, let us consider a very singular Case, related in the Philosophical Transactions of the Royal Society of *London* in the Year 1730. N° 414. A Soldier received a Wound; of which, after the Appearance of various Symptoms, he died on the seventh Day: Upon laying open his Body, no internal Part was found hurt, except his Gall-bladder; which being gently perforated, in the Bottom, was callaps'd and flaccid, in consequence of a total Effusion of the Bile: Though no Signs of the slightest Inflammation appeared in any of his Viscera, yet his Intestines were highly inflated, distended, and tinged of a yellow Colour by the discharged Bile, which was effus'd all over the Abdomen. The external Wound was dry, and free from Tumor; nor, during the Patient's Life, was it accompanied with any Sign of Inflammation; so that it is surprising that a Wound apparently so slight, unaccompany'd with a Fever, or any other violent Symptoms, should so soon prove mortal.

Among the memorable Symptoms afflicting this Patient, we ought first of all to consider the Inflation of his Abdomen, which

which immediately ſucceeded the Wound, and remained without any conſiderable Increaſe or Decreaſe, and even appeared after Death; ſo that the Patient appeared to have been affected with an Aſcites, or a Tympanites. Yet during this Diſtention of his Inteſtines, which was the Cauſe of the Inflation of his Abdomen, he could diſcharge no Eructations nor Flatulences either upwards or downwards; and though he eat and drank ſufficiently, yet he had not one Stool through the whole Courſe of the Diſorder, nor could his Body be rendered ſoluble by the ſtrongeſt Purgatives and Clyſters: His Urine was in ſmall Quantity, yellow, as it were tinged with Saffron, and without any Sediment. But nothing of a febrile Heat was obſervable in all his Body; for his Pulſe was not quick, but rather equal and ſtrong, till a little before his Death, when it became inequal: Nor was his Tongue black, hard, and rough, as it generally is in Fevers, eſpecially of the inflammatory Kind; but it was dry, for want of a due Quantity of Saliva. And though, during his Diſorder, he ſlept but about half an Hour at very diſtant Intervals, and could not be diſpoſed to ſleep by the Uſe of Opium, yet the ſmalleſt Signs of a Delirium did not appear; and thus he died *without any more violent Symptoms*, except an Hiccup and a gentle Effort to vomit, which, ſeized him the Day before he died.

From this Deſcription of the Caſe, and its concomitant Symptoms, we ſhall draw ſomething for the Eſtabliſhment of our Doctrine. Hence, then, we learn, how much a laudable Secretion of the Bile contributes to the Preſervation of Health, and how much its Defect or Peccancy tend to induce the moſt violent Diſorders, eſpecially a Tympanites; for in this Patient's Caſe, no other Cauſe than the Effuſion or total Defect of the Bile, produced the Inflation of the Inteſtines; by which, being diſtended beyond their proper Sphere of Elaſticity, they totally loſt their periſtaltic Motion; and when this Motion was deſtroy'd, not only the natural Motion of the Chyle through the lacteal Veſſels was hindered, but, alſo, the Secretions in the other Viſcera weaken'd, and at laſt deſtroy'd. Hence Death muſt of Neceſſity ſoon enſue.

As for the Prognoſtics of a Tympanites, it is juſtly reckoned a dangerous Diſorder, ſince the Patients are oftener obſerved to die than recover. Hence *Puerarius in Additam. ad Burnetti Theſaur. med. Tom.* 2. *Lib.* 8. ingenuouſly confeſſes, that he never knew a Patient afflicted with a Tympanites recover; becauſe this Diſorder indicates an obſtinate Conſtriction of the Pores, an hardly diſſoluble Incarceration of the Flatulences, and a violent Diſtention of the Parts, accompanied with a Privation of their Tone. When a Tympanites is accompanied with, or ſupervenes a Dropſy, it hardly admits of a Cure, becauſe the violent Diſtention of the abdominal Muſcles and Inteſtines, by compreſſing the Veins, renders the Circulation of the Blood very languid and weak, produces a coſtive State, and ſuppreſſes Perſpiration. A ſimple Tympanites, when inveterate, and not quickly cured, in Women and Infants, paſſes into an obſtinate chronical Diſorder, which proves mortal.

On the contrary, that Diſtention of the Abdomen, which is called a flatulent Colic, is not naturally very dangerous, and is eaſily cured; when, by proper internal and external Remedies, the loſt Tone of the Inteſtines is reſtored. But if Spaſms concur to produce the Flatulences, as it generally happens in Women whoſe Menſes are not duly diſcharged, or in thoſe who labour under a Stone in the Ureters, or biliary Ducts; or, if ſpaſmodic Symptoms ſupervene Efforts to the hæmorrhoidal Diſcharge, then the Cure is ſomewhat more difficult, becauſe the Force and Operation of the Medicines ought partly to allay the Spaſms, and partly to reſtore the Tone of the Inteſtines; which Intentions, however, ſeem inconſiſtent with each other.

In curing Flatulences of the Stomach and Inteſtines, the Phyſician's principal Intention is, to promote a Diſcharge of the Vapours by the Anus, and to attenuate, and gently carry off by Stool the tough and viſcid Matter which contributes to the Generation of the Flatulences. For this Purpoſe, we are, firſt of all, to uſe derivative, diſcutient, and evacuating Clyſters; ſuch as thoſe prepared of Hyſſop, Clary, Flowers of common and Roman Chamomile, Tops of Yarrow, Juniper-berries, and the larger carminative Seeds, with Veal-broth, adding a ſufficient Quantity of Sal-gemmæ, Sal-ammoniac, or *Epſom* Salt, and the Oil of Chamomile. But it is to be obſerved, that one or two Clyſters are not ſufficient for removing the Diſorder; but they are to be frequently repeated.

With theſe we are to interpoſe Laxatives, poſſeſſed of a carminative, and at the ſame time of a ſomewhat anodyne Quality; ſuch as the balſamic Pills, prepared in my Method, or that of *Becher* and *Stahl*. Or if the Patient is ſtrong, and the Inflation a real Tympanites, I generally exhibit two Parts of the *Extractum Panchymagogum Crollii*, with one Part of the *Pilulæ Wedelianſii*, or of the *Pilulæ Starckii*, or *Pilulæ de Styrace*, in ſome not very ſpirituous carminative Water.

After theſe, we are to uſe Medicines poſſeſſed of a moderately balſamic Principle, and a volatile, oleous, and aromatic Salt, commonly called Carminatives: But the Operation of theſe Medicines is not to be ſo explained, as if, by their ſubtle, volatile Salt, they attenuated the Matter of the Flatulences, and rendered it thinner; but rather, becauſe, by invigorating the Tone and Syſtole of the inteſtinal Coats, they hinder the Stagnation of the Flatulences, move them from their Seat, and render them more capable of being eaſily eliminated, or prevent the Generation of new Flatulences: For as the deſtroy'd periſtaltic Motion of the Stomach and Inteſtines is the principal Cauſe of Flatulences, ſo all Medicines, which have a remarkable Virtue in ſtrengthening theſe Parts, are moſt proper for the Removal of this Diſorder. The beſt and moſt approved of this Kind, are Powders prepared of the Roots of Wake-Robin, Zedoary, and white Burnet; the digeſtive Salt of *Sylvius*, or vitriolated Tartar; Cumin-ſeeds; the Tops of the leſſer Centaury, and dried Orange-peel, each one Dram; and ſix Drops of the genuine Oil of Chamomile, or of the Oil of Cedar, or of the Oil of Orange-peel; to which, if there is a Suſpicion of an Acid lodged in the *Primæ Viæ*, we may commodiouſly add Crabs-eyes.

To this Claſs of Medicines we may refer the following in a liquid Form.

Take of the Eſſence of Orange-peel, and of the carminative Eſſence of Zedoary of *Wedelius*, each half an Ounce; of the Spiritus Nitri dulcis, or of my anodyne Liquor, and of the Spiritus de Tribus, each two Drams: Mix, and exhibit forty Drops for a Doſe.

Take of the carminative Water of *Dorncrellius*, of the Waters of common Chamomile and Zedoary prepared with Wine, each one Ounce; of the Spiritus Nitri dulcis, of the pure Oil of Caraway, eight Drops, mixed with two Drams of Sugar.

Nor are we to neglect external Remedies, ſuch as Liniments apply'd by way of Ointment to the whole epigaſtric Region. The principal Ingredients of theſe Liniments ought to be, boil'd Oils of Chamomile and Rue, Oil of Nutmeg, and Peruvian Balſam; with which we may mix the Oils of Juniper, Caraway, Aniſe, or Cumin: But, inſtead of all others, we may uſe the Liquid Balſam of Life, which, when mixed with three Parts of *Hungary* Water, and applied by way of Ointment to the Abdomen, or laid on with a warm Linen Cloth, is found of great Efficacy.

If a flatulent Diſtention of the Abdomen proceeds partly from a long-continued ſpaſmodic Structure of the inteſtinal Coats, and partly from their preternatural Tenſion and Hardneſs, and if theſe are ſupported by the Stagnation and bilious Acrimony of the Humours, we are to deal very cautiouſly with hot, aromatic, volatile, and ſulphureous Carminatives, ſuch as the diſtil'd ethereal Oils of Juniper and Caraway; ſince theſe, by increaſing the Elaſticity of the Flatulences, and the Turgeſcence of the Humours, render the Inflation more obſtinate, and the Symptoms more dangerous; for they excite a preternatural Heat, accompanied with an inſatiable Thirſt, an Anxiety, and great Difficulty of Breathing. Hence *Fienus*, in *Lib. de Flatibus*, *Cap* 12. mentions a Girl miſerably afflicted with a Tympanites, who, by the Uſe of an hot Electuary preſcribed by the Phyſician for the Diſcuſſion of the Flatulences, fell into a new, and at the ſame time ſo large an Inflation, that the whole Breaſt was ſurpriſingly diſtended, and the miſerable Patient ſoon after died. To this Purpoſe, alſo, *Helmot.* in *Lib. de Flatibus*, tells us, "That if Flatulences are "Vapours and Exhalations, Pain and Flatulences muſt be more "excited, and a Diſtention of the Parts produced, by the Ex-"hibition of hot Subſtances; becauſe, by this means, the Vapours "muſt be increaſed, and the Pains and Diſtentions multiplied."

All Purgatives, even Preparations of Sena and Aloes not excepted, are carefully to be avoided, becauſe they dry the Inteſtines, and render their Fibres tenſe, conſtricted, and hard. But they are ſtill more injurious and dangerous, if, by repeated Doſes of them, any one attempts the Evacuation of the Flatulences. We rather recommend Preparations of Manna, with Cream of Tartar diſſolv'd in Whey, or the *Sedlitz* Waters; not omitting, at the ſame time, emollient, and gently diſcutient Clyſters.

When Spaſms copiouſly generate Flatulences, which frequently happens in a plethoric hæmorrhoidal State, to young Perſons and Adults, Preparations of Nitre, join'd with deterſive and refrigerating Salts, are moſt ſafe. Good Effects are, alſo, produced by the mineral Liquor; Citron-juice, with Salt of Wormwood; Oil of ſweet Almonds; Emulſions of the Four cold Seeds; the *Pilulæ Sylvii*, and the *Pilulæ Starckii*: Veneſection is, alſo, ſometimes beneficial. Hence *Carolus de la Font*, Profeſſor in the Academy of *Avignon*, in *Diſſert. de Hydrope Tympanite*, gives us an Inſtance of a Perſon by him cured of a Tympanites, by Tincture of Roſes, impregnated with a few Drops of the Spirit of Vitriol, and a Julap, prepared of the Waters of Purſlane Succory,

Succory, and Water-Lilies, together with the Syrups of Water-Lilies and Poppies, Sal Prunellæ, and Spirit of Sulphur; interposing now-and-then a temperate Emulsion, or a Decoction of Barley, with Syrup of Lemons, and Sal Prunellæ; and an Opiate compoſed of mineral Cryſtal, Crabs-eyes, Vitriol of Mars, and Conſerve of Roſes.

When theſe violent and obſtinate abdominal Diſtentions happen after difficult Labours, Lying-in, Abortion, or an irregular Diſcharge of the Menſes, the Pills made in Imitation of thoſe of *Becher*, of bitter Extracts and temperate reſinous Gums, with a ſmall Portion of Aloes, exhibited in a proper Order, and in due Doſes, are of ſingular Efficacy. The ſame happy Effects are, alſo, produced by temperate balſamic Elixirs, prepared of the ſame Ingredients; for theſe, by their mild, ſulphureous, and balſamic Virtue, reſtore the loſt Tone and Strength of the Stomach and Inteſtines, and produce happy Effects, eſpecially when the Bile is defective, or too ſtrong, provided they are not exhibited in too large Doſes: But if the Patient is too long habituated to them, they, in Proceſs of Time, by drying the inteſtinal Coats, produce preternatural Straitneſs in particular Parts, and often bring on fatal Symptoms.

Clyſters are of great Efficacy, not only to prevent Flatulences, but, alſo, remove them, both in their Beginning and State. But if the Spaſms exert their Tyranny in the ſmall Inteſtines, Clyſters are not ſufficient; but we are to preſcribe Preparations of Manna; Caſſia; *Epſom* Salt; *Sedlitz* Salt; and Goats Whey, prepared with Cream of Tartar, or vitriolated Tartar. The proper Uſe of hot and cold medicinal Waters is, alſo, of great Uſe in hypochondriac Patients afflicted with Flatulences.

Among the external Remedies for violent Inflations of the Abdomen, the Antients moſt eſteemed dry Fomentations; and, eſpecially Sand dried by the Fire, or the Heat of the Sun. Hence they recommend this Remedy in various Parts of their Works. See *Celſus*, *Lib.* 3. *Cap.* 21. And *Pliny*, in *Hiſtor. natural Lib.* 21. *Cap.* 6. informs us, "That Sea-ſand, eſpecially when ſmall, "and rendered hot by the Sun, is of ſingular Service in drying "the Bodies of dropſical Patients." *Cœlius Aurelianus*, in *Lib.* 3. *Tard. Paſſ. Cap.* 8. is, alſo, of Opinion, That warm Fomentations of Sand ought to be uſed in dropſical Caſes. But, as other Things ſucceſsfully uſed by the Antients, are by us neglected, ſo, alſo, this Practice is diſcarded, though it ſeems to have a pretty effectual Tendency to anſwer its Intention: For the warm Sand, not only by the Compreſſion occaſioned by its Bulk, checks and confines the Inflation, but, alſo, by its dry Heat attenuates the peccant and ſtagnant Humours, ſo as to reſtore a free Circulation of the Juices: By this means, alſo, the Pores of the Skin are opened, and Perſpiration aſſiſted. It is a common Practice at preſent to apply dry and hot Oats, included in a Bag, to the Regions of the Stomach and Navel; becauſe Oats are poſſeſſed of a diſſolving and diſcutient Virtue. Beſides theſe Meaſures, I have, alſo, known the Soap-plaiſter well impregnated with Camphire, and ſoften'd with Oil of Henbane, afford conſiderable Relief when applied to the Abdomen. The Galbanum-plaiſter is, alſo, little inferior to it in Efficacy. *Frederic Hoffman.*

TYMPANUM. The Drum of the Ear. It, alſo, imports a Part of a chirurgical Machine, in *Oribaſius*, *de Machinamentis*, *Cap.* 4.

TYPHA.

The Characters are;

It has the Appearance of the Arundo; the Flower is male, conſiſting only of naked and very duſty Stamina, which are cloſely compacted into a ſlender Spike. The Ovaries, which are collected into a very cloſe Spike, are cloſely lodged under the former Spike, and are of a thin Contexture, and furniſhed with a Multitude of Filaments: Both Spikes are extended in one continued Length in the Figure of a Club.

Boerhaave mentions three Sorts of *Typha*; which are,

1. Typha; paluſtris; major. *C. B. P.* 20. *Theat.* 337 *J. B.* 2. 539. *Tourn. Inſt.* 540. *Boerh. Ind. a.* 2. 167. *Typha.* Offic. Ger. 42. Emac. 46. Rai Hiſt. 2. 1312 Synop. 3. 436. *Typha paluſtris maxima.* Park. Theat. 1204. CATS-TAIL, or REED-MACE.

This Plant is found in Marſhes, and on the Brinks of Rivulets. The only Part of it uſed is its Flower, which, when mixed with well-waſhed Hogs-lard, cures Burns. *Dale.*

2. Typha; paluſtris; clavâ gracili. *C. B. P.* 20 *Theat.* 340.

3. Typha; paluſtris, minor. *C. B. P.* 20. *Theat.* 341.

Boerh. Ind. alt. Plant.

TYPHA AROMATICA. See ACORUS VERUS.

TYPHLINIDIA. τυφλινίδια. A Sort of pickled Fiſh mentioned by *Oribaſius*, *Collect Medicinal. L.* 2. *C* 58.

TYPHODES, τυφώδης πυρετός. The ſame as TYPHOS.

TYPHOMANIA, τυφωμανία, from τύφος, and μανία, in *Galen's Exegeſis*, is expounded by μικτὸν ἐκ φρενίτιδος καὶ λιθάργου πάθημα, "a Diſorder complicated of a Phrenſy and a Lethargy." But in ſome Copies of *Galen* it is written τυφλομανία, as well as in 4 *Epid.* where they read ἁπλῶς τυφλομανία, to which Place *Galen* ſeems to have an Eye in his *Exegeſis*, though it be there read in the Nominative Caſe. We, however, read τυφωμανία, in both Places, and underſtand it of an Affection compounded of a Phrenſy and a Lethargy; in which the Patients are delirious, and labour under a ſleepy Coma, from a Mixture of Bile and Phlegm, according to *Galen*, *Com.* 1. *in Prorrhet.* where he ſays, ἐγὼ μὲν ὅταν ἄχρι τέλους ᾖτε παραφροσύνη καὶ τὸ κῶμα διαμείνῃ μικτὸν, &c. "When a Delirium and Coma continue to the "End, I call it a Diſorder complicated of a Phrenſy and "a Lethargy, which by ſome is called τυφωμανία, as in *Hippo-*"*crates*, *de Morbis.*" From hence ariſes a Suſpicion, that the Books *de Morbis*, as now extant, are not entire; and that *Galen*, in his *Exegeſis*, had a Regard to ſome Paſſage therein which is now wanting; for we find no mention of *Typhomania* in theſe Books, nor in the Book *de Morbis internis*. This Affection, thus complicated of a Phrenſy and a Lethargy, may be called a lethargic Madneſs or Delirium, or a mad and delirious Lethargy, according to the Author of the *Definitiones medicæ*; though for τυφωμανία we there read corruptly τυφωΐα (*Typhonia*), which corrupt Reading is follow'd by the Tranſlator. *Galen*, *Lib. de Comate*, *Cap* 4. and *Com.* 1. *in Prorrhet.* tells us, that this Diſorder is called *Typhomania*; but in his *Iſag. Pulſ* and *Lib.* 4. *de Cauſ. Pulſ* he tells us, that it is a Diſeaſe which wants a Name, and therefore he defines it by ſome proper Characters; which is a Cuſtom he himſelf, however, *Lib. de Comate*, *Cap.* 4. aſcribes to ignorant Phyſicians. This Variety of Opinions about the Name, and the Diſorder ſignify'd by it, might, perhaps, give Occaſion to *Hippocrates*, 4 *Epid.* to call it, as it were, to prevent Miſtakes, ἀληθὴς τυφωμανία, "a *true* Typhomania."

TYPHONIA. The ſame as TYPHOMANIA.

TYPHOS, τῦφος. Of this Diſorder, according to *Hippocrates*, there are five Species: The firſt is a legitimate continual Fever, which impairs the Strength, is accompanied with Pains of the Belly, and a preternatural Heat of the Eyes; hinders the Patient from looking ſteadily on any Object whatever; and renders him unable, in conſequence of the violent Pain, to anſwer any Queſtion that is aſked him; though he begins to ſpeak, and fix his Eyes attentively on Objects, when he is at the Point of Death.

The ſecond Species of Typhus begins with a Tertian or Quartan Fever, which are ſucceeded by a Pain of the Head. In this Diſorder the Patient diſcharges a large Quantity of Saliva and Worms from his Mouth: His Eyes are painful, his Countenance pale, and his Feet, and ſometimes his whole Body, ſerz'd with ſoft Swellings: His Breaſt and Back are now-and then painful, his Body rumbles, his Eyes are fierce, he ſpits a great deal, and his Saliva adheres to his Throat, which renders his Voice tremulous and faint.

The third Species of *Typhus* is known by intenſe Pains in the Joints, and ſometimes over all the Body: The Blood, contaminated by the Bile, becomes hot, and ſtagnates in the Limbs; whilſt that Portion of the Bile which is retained in the Joints, becoming indurated, like Gravel-ſtone, the Patient grows lame.

The fourth Species of *Typhus* is known by a violent Tenſion, Elevation, and Heat of the Abdomen, ſucceeded by a Diarrhœa, which ſometimes terminates in a Dropſy, and is ſometimes accompanied with a Fever.

The fifth Species of *Typhus* is known by a Paleneſs, and kind of Tranſparence of the whole Body, as if it was a Bladder full of Water, though without any Inflation. On the contrary, the Body is extenuated, dry, and weak, eſpecially about the Clavicles and Countenance: The Eyes are very hollow, and the Body ſometimes black. The Patient rarely winks with his Eyes, and feels the Bed-clothes with his Hands, as if he wanted to catch Knaps of Wool, or Straws. He is more uneaſy after eating, than when he was in a State of Health. He loves the Smell of an extinguiſhed Lamp, and is often troubled with Poliutions, both when aſleep and awake.

TYPOS, τύπος. The Form, or Type of a Diſeaſe; importing the particular Manner of its Remiſſion, and Exacerbation.

TYRANNIS, τυραννὶς. The Name of an Antidote in *Galen*. *L.* 2. *de Antidot. C.* 10

TYRBE, τυρβὴ, is a Perturbation, or Confuſion. Thus, *Lib de Fract.* πᾶσαν γὰρ ἂν τυρβὴν παράσχοι τῇσιν ἐπιδέσεσιν, "ſhould cauſe a Diſorder in the whole Diſpoſition of the Ban-"dage." Here τυρβὴ is by *Erotian* expounded ταραχὴ, a Perturbation, or Confuſion. The ſame is the Senſe of the Word in *Lucian*, *Polybius*, and *Ariſtophanes in Veſpis.*

TYRIA. The ſame as OPHIASIS in the *Arabic* Authors. See ALOPECIA.

TYRIASIS, τυρίασις The ELEPHANTIASIS, or Leproſy.

TYRIUM EMPLASTRUM. The Name of a Plaiſter deſcrib'd by *Aetius*, *Tetrabib.* 4. *Serm.* 3. *C.* 12.

TYROS, τυρὸς. Cheeſe.

TYROSIS. A Diſorder of the Stomach proceeding from Milk coagulated therein.

TYRRHENICUM EMPLASTRUM. The Name of a Plaiſter mentioned by *Aetius*, *Tetrabib.* 4. *Serm.* 3. *C.* 14.

TYRUS. A barbarous Word, importing a Serpent, or Viper.

V.

VACCA. The Cow. See Bos.

VACCARIA. A Name for the *Lychnis ; ſegetum ; rubra ; foliis Perfoliatæ.*

VACCINIA. See VITIS IDÆA.

VACCINIA NIGRA. A Name for the *Vitis Idæa ; foliis oblongis ; crenatis ; fructu nigricante.*

VAGINA. The Paſſage from the external *Pudenda* to the Mouth of the *Uterus*. See UTERUS. The Name is, alſo, applied to other Parts of the Body, as to the *Capſula Gliſſonii*, which is called *Vagina Portæ*.

DISORDERS INCIDENT TO THE VAGINA.

The Method of dividing preternatural Coheſions in the Genitals of Women.

Some Girls are born with the Orifices of the *Pudenda* ſo conglutinated, that they are unable to diſcharge their Urine, whence they continue, for the firſt Days after their Birth, perpetually crying, without any Evacuation of Urine. In this Caſe, the Child muſt inevitably periſh, if not ſpeedily relieved by Inciſion. Some have the *Urethra* open, for the free Diſcharge of the Urine ; and others, but a ſmall Perforation, by which the Urine is made with the greateſt Difficulty, and only by Drops ; and, in both theſe Caſes, the *Vagina* may be preternaturally cloſed, by the *Hymen*, or ſome other Membrane ; by which means, as they begin to ripen, and arrive at the Age of Puberty, when the menſtrual Flux begins to flow, it has no Paſſage left for its Diſcharge, nor can they admit of Coition : And thus, from the menſtrual Blood being collected in the *Vagina*, are produced violent Pains, Tumors of the *Abdomen*, Faintings, *Deliria*, and other moſt malignant Symptoms. This Diſorder has been obſerved by many Phyſicians, who have denominated Girls, in this Condition, *Atretæ*, which denotes *imperforate*. It appears, that *Ariſtotle* was acquainted with this Diſorder, when he ſays, " That in ſome Girls the Mouth " of the Womb continued cloſed, or conglutinated, from their " Birth to the firſt Appearance of the menſtrual Diſcharge ; " which endeavouring to force its Way, violent Pain is ex- " cited, and the Part either burſts ſpontaneouſly, or muſt be " ſeparated by the Surgeon. Sometimes the Death of the Pa- " tient has enſued, when the Paſſage has been opened violently, " or could not be divided at all." Other Girls have the Mouth of the *Vagina* cloſed with a Membrane, which, however, is furniſhed with one or more Perforations proper for diſcharging the menſtrual Flux, but will not admit of connubial Embraces ; and therefore the Diſorder is ſeldom diſcovered, before they are married. Various Caſes of theſe Kinds are deſcribed by *Roonhuyſen, Lib. 2. de Clauſura Uteri, Obſ. 1. Benevenius de abdit. Morb. Cauſſ. Cap. 28. Cabrolius Obſ. Anatom. 23. Fabricius ab Aquapendente, in Oper. Chir. de Hymene imperforato. Hildanus, Cent. 3. Obſ. 60. Schenck, Lib. 4. de Part. Genital. Solingen, in Obſ. 5. Meckren, Obſ. Chirurg. 55. Mauriceau*, in his *Obſ. ſur la Maladies des Femmes groſſes ; Ruyſch*, in his *Obſ. Chir. 32.* and by *Saviard*, in his *Obſ. Chirurg. 4.*

This Diſorder differs, in different Patients : In ſome there appears the Mark of a Perforation, or Paſſage, whereby the Urine may be eaſily diſcharged, and which, at the ſame time, leads to the *Vagina* and *Uterus* : In others, no ſuch Perforation can be obſerved, becauſe of the Thickneſs and Denſity of the obſtructing Membrane, or the firm Coalition of the *Vagina*, which renders the Cure either impracticable, or extremely difficult. Sometimes, in new-born Infants, a copious Collection of Urine, perhaps, in the *Vagina*, or in Adults, who have the urinary Paſſage open, the menſtrual Blood, ſo diſtend the *Labia Pudendi*, as to ſhew the natural Paſſage of the *Vagina*, and, alſo, of the *Urethra*, according to the Obſervations of many of the above-mentioned Authors. Sometimes theſe Coheſions are not only formed in the Fœtus before the Birth, as *Ariſtotle* and *Celſus* have obſerved ; but they, alſo, happen in Adults, after an Exulceration of the Orifice of the *Vagina*, eſpecially after a difficult Birth, when the Parts are ſo violently lacerated, inflamed, and exulcerated, that its Sides either entirely coaleſce, or only a ſmall Perforation remain, for the Diſcharge of the menſtrual Blood, but not ſufficient to admit of Copulation. In new-born Infants, therefore, it prevents the Diſcharge of Urine ; but, in Adults, it obſtructs the, 1. Menſtrual Flux. 2. Coition. 3. Conception. And, 4. The Birth. Its Cure, therefore, is extremely neceſſary.

Theſe Diſorders are diſcovered, in new-born Children, when they retain their Urine for the firſt Days after their Birth, and by ſeeing and feeling the Part ; but in Adults, when the *Vagina* is obſtructed by a Membrane, it appears from a Defect of the menſtrual Diſcharge, intenſe Pains about the Pubes, Loins, and Belly, a Paleneſs of the Face, and Swelling of the Abdomen ; and, moſt certainly, by feeling and inſpecting the Parts : But in thoſe who have a ſmall Perforation in the *Hymen*, ſufficient to permit the menſtrual Diſcharge, when Copulation is found to be obſtructed, difficult, and imperfect. With regard to the Prognoſtic, if the obſtructing Membrane be thin, it is generally broken in the firſt Act of Coition ; or, if this Remedy ſhould not be ſufficient, it may be eaſily removed, by the Knife. But if the Coheſion of the Parts is ſtrong, and lies deep, or if the Obſtruction be made by a thick fleſhy Subſtance, the Cure is difficult ; not only becauſe the Bladder, or neighbouring Inteſtine, are in danger of being wounded, as *Roonhuyſen* acknowledges once to have happened to himſelf ; but the Cure often does not ſucceed, becauſe of the great Difficulty of preſerving a ſufficient Wideneſs of the Paſſage.

In order to the Cure, it is, in the firſt Place, neceſſary, to conſider, carefully, the Nature and State of the Diſorder : If there appears any Mark of the *Urethra*, and the *Vagina*, ſo that they are only obſtructed by a Membrane, this Membrane muſt be opened in both theſe Paſſages, if both are cloſed, by a rectilinear Inciſion, from the ſuperior to the inferior Part ; or, as *Celſus* adviſes, by a crucial Inciſion, according to the natural Aperture of the Part ; but if a ſmall Opening be left in the upper or lower Part of the Orifices of theſe Paſſages, the Membrane may be divided with a Pair of Sciſſars, or with a Director, and falciform Knife, taking care not to injure the urinary Paſſage, much leſs the Bladder : Then, if it appear neceſſary, the whole Membrane may be extirpated ; afterwards, a proper Tent, anointed with Baſilicon, or ſome digeſtive Ointment, muſt be introduced into the Wound for a few Days ; and, to prevent its falling out, ſecured by a Bandage ; then a Tent, ſpread with a drying Ointment, as that of Ceruſs, or Diapompholyx, muſt be applied, as before, and continued till no Danger appears of a new Coheſion of the Parts : But if the Membrane be thick, or if the Obſtruction be formed by a fleſhy Subſtance, ſo that no Appearance remains of the natural Paſſage of the *Vagina*, a careful Inquiry muſt be made, whether the Cavity may not be perceived by the Finger ; if it can thus be diſcovered, with great Caution make a rectilinear Inciſion, ſufficiently large, in the proper Place, as before directed ; then laying hold of it by the Extremity, with a Forceps, or Hook, let it be extirpated, that the Paſſage may be ſufficiently opened : Proceed, in the reſt of the Cure, as before directed, excepting that, towards the Concluſion, when the Wound begins to heal, a leaden Pipe, of a ſufficient Size, ſpread with a cicatrizing Medicine, muſt be introduced ; and this Medicine muſt be continued, till a Cicatrix be induced.

Sometimes new-married Women, and even thoſe who have lived Years in the matrimonial State, have the Orifice of the *Vagina* ſo contracted, either by an Exulceration, or ſome other Cauſe, that they cannot admit of conjugal Embraces, although the menſtrual Blood may be freely diſcharged. In this Caſe, it may be adviſeable, as I have happily tried the Experiment, to enlarge the Aperture, by making Inciſions, of a ſufficient Depth, in its Sides, and lower Parts, and by Abſciſſion of the ſuperfluous Parts of the Lips ; and then a large Tent, with dry Lint, twiſted, muſt be introduced : Afterwards, in the ſubſequent Dreſſings, which muſt be repeated twice every Day, excepting the Day of Operation, leſt the retained Matter, and *Sordes*, ſhould occaſion a troubleſome fetid Smell, apply to the Sides of the Wound a vulnerary Balſam, and then a proper Peſſary, made of prepared Sponge, or the ſwelling Roots, for the more convenient dilating of the Part, and let this Treatment be continued, till it begins to heal : And, laſtly, a leaden Pipe, ſpread with ſome deſiccative Medicine, muſt be introduced every Day, till the Part is healed, and no more Danger of Coheſion remains. When the Conſtriction of the Orifice of the *Vagina* has not been from the Birth, but produced by ſome external Cauſes, I have ſucceſsfully experienced the Method of Cure here laid down. *Saviard* relates a like Caſe, in his *Obſ. Chirurg. 32.*

Cabrolius relates a remarkable Caſe of a Patient about eighteen or twenty Years of Age, whoſe urinary Paſſage was entirely obſtructed by a thick Membrane ; and her Urine, being, pro-

bably, conveyed by the *Urachus*, was conſtantly diſcharged by the Navel, which hung down about the Length of four Inches, like the Comb or Beak of a Turkey-cock; and exciting almoſt an intolerable fetid Smell, as of putrid Urine. To remedy this moſt troubleſome Diſorder, *Cabrolius* firſt made an Inciſion into the Membrane which obſtructed the Urethra; and, in order to preſerve a free Paſſage for the Urine, he introduced a leaden Pipe as far as the Bladder. Next Day he made a Ligature with a ſtrong waxed Thread, as is commonly done in cutting Ruptures, upon the protruded Part at the Navel, by which the Urine had been hitherto evacuated, and extirpated it below the Ligature: He then applied to it the actual Cautery, and, after the Eſchar was removed, he deterged the Ulcer, and induced a Cicatrix with deſiccative Medicines, as in other Ulcers: Thus he completed the Cure in twelve Days. The ſame Method may be followed in like Caſes, only omitting the actual Cautery, which is not here very neceſſary, and greatly intimidates the Patient, and all who are preſent.

The Method of opening the Vagina, when the Obſtruction is deeply ſeated.

Beſides theſe Diſorders already explained, Women are ſometimes ſubject to have the Vagina preternaturally obſtructed, by a Membrane deeply ſeated; or by an entire Coheſion of its Sides; and thus the Diſcharge of the menſtrual Flux being prevented, moſt acute Pains of the Belly and Hips, Swellings of the Abdomen, with *Nauſea*, Extenuation, Watchings, and the other Symptoms above-recited, and ſometimes even Madneſs, are induced. Sometimes the Diſorder is born with the Patient; but frequently it ariſes from an external Cauſe, eſpecially a difficult Birth, when, after a violent Laceration and Inflammation, the Vagina becomes exulcerated. Inſtances of this Kind are given by *Roonhuyſen*. *Benevenius* relates a Caſe of this Nature that proceeded from a Venereal Cauſe: And *Becker*, one from the Small-pox. Frequently the obſtructing Membrane is ſituated near the Orifice of the Vagina; ſometimes about the Middle; at other times near the Uterus. Sometimes the whole Vagina, or great Part of it, is concreted, or, at leaſt, filled up with a thick fleſhy Subſtance; and if this Concretion reaches deep, difficult and dangerous is the Cure; becauſe the Bladder, and *Inteſtinum Rectum*, as we before obſerved, are very ſubject to be injured. Sometimes the Membrane does not entirely obſtruct the Vagina: And ſometimes the Coheſion of its Sides is not total, but a Perforation is left for the Diſcharge of the Menſes. Women, however, in this Condition, are capable of but an imperfect Coition; and hence new-married People, eſpecially if they are prone to Superſtition, frequently imagine themſelves bewitched; or the Huſband may think his Wife incapable of Conception; and therefore, meditate a Divorce, though ſometimes ſuch Women have become pregnant. *Becker* relates a particular Story of a wanton Girl, who had been born with an obſtructed Vagina: She being convinced by repeated Trials, that ſhe was incapable of being deflowered, enticed many vigorous young Fellows to lie with her; and when ſhe had diſappointed their Hopes of Enjoyment, and deprived them of their Money, ſhe ridiculed them as inſignificant Bedfellows for a Woman. But at length ſhe committed herſelf to the Care of a Surgeon, to have this Impediment removed; and he ſoon ſo completely remedied his Patient, that ſhe, both as a Fee, and a Teſtimony of the happy Cure, in a proper Time preſented him with Twins, he himſelf being the Father.

With regard to the Cure of this Diſorder, it may be eaſily effected in young Girls, when the preternatural Membrane is thin, and not very remote from the Orifice of the Vagina, and if, as was above obſerved, the Inciſion be cautiouſly performed. But, in Women this Operation cannot be ſo conveniently performed, unleſs the Membrane be diſtended by the menſtruous Blood, as it has been performed by the above-mentioned, and others. *Amyand*, in the *Philoſophical Tranſactions*, N° 422. gives the Caſe of a Woman whoſe Vagina, after Delivery, was ſo obſtructed with concreted Caruncles, that the Efflux of the menſtruous Blood was not only prevented, but, by its collecting in the Vagina, the Urethra was compreſſed, and a Suppreſſion of Urine enſued. All theſe Authors relate, that immediately after the Inciſion, not only a ſurpriſing and copious Diſcharge is made of inſpiſſated Blood, and a fetid Liquor, but the Patient is relieved from all the Miſeries ſhe before ſuffered, and even from imminent Death: And, laſtly, the Wound has been brought to a Cicatrix, almoſt without the Uſe of any other Remedies than proper Tents, Peſſaries of Wax, and leaden Pipes. But, if the Membrane be thicker, and deeply ſeated in the Vagina, whether it be furniſhed with a Perforation or not, the Operation muſt be performed in the ſame manner: But greater Caution is required, as the *Inteſtinum Rectum*, and Bladder, are more expoſed to Injuries; the reſt of the Cure may be continued, as before directed: But greater Care is, alſo, neceſſary, in preſerving a ſufficient Wideneſs in the Paſſage. Nor will it be improper to uſe here a *Speculum Uteri*, for the more accurate Inſpection of the Parts, and the more wary Performance of the Inciſion.

If Women in their Pregnancy, or in Labour, be afflicted in this manner, a timely Remedy muſt be applied; leſt the Difficulty of the Birth ſhould induce the moſt violent Diſorders. If a pregnant Woman be thus affected, the Membrane ſhould be extirpated long before the time of Travail; for then the Fœtus, lying behind the Membrane, may be eaſily wounded with the Knife. But if the Cure, by Ignorance or Negligence, be delayed to the time of Labour, the Operation muſt, even then, be performed, but with the utmoſt Caution, to prevent any Injury happening to the Child. A ſmall Wound muſt, therefore, be firſt made in the preternatural Membrane, with a Knife armed with a Button, ſee *Tab.* XXVI. *Fig.* 4. 5. or a Director may be uſed; or a proper Forceps; or the common chirurgical Knife, which muſt be applied with extreme Care. *Mauriceau* adviſes, that the Midwife *ſhould forcibly* divide this Membrane with her Fingers; but, as the Conſequences attending Laceration may be extremely dangerous, I think Inciſion preferable.

It remains to be obſerved, that if the Vagina be not obſtructed by a Membrane, but by a thick fleſhy Subſtance, deeply ſeated; or if the Sides of the Vagina are concreted, the Operation muſt be both difficult and dangerous; from which, therefore, we ought rather to refrain, as *Benivenius* formerly did. But when the Operation is performed, in Caſes leſs dangerous, unleſs the Part be long kept diſtended with Spongetents, proper Pipes, or Peſſaries, it will, ſoon after the Cure, eaſily contract again, ſo as not to admit conjugal Embraces. And upon this account I have not only been obliged to repeat the Operation, but *Roonhuyſen* has done the ſame, who adviſes Surgeons particularly to attend to theſe Circumſtances. But when there is an Adheſion of the Sides of the Vagina, deeply ſituated, as I once obſerved in a Butcher's Wife, in whom the Diſorder proceeded from a difficult Labour, the Inciſion is extremely dangerous; from which I therefore abſtained, in this Caſe, contrary to the earneſt Intreaties of both her and her Huſband, who were deſirous of having Children. But if the Vagina be obſtructed by a thick fleſhy Subſtance, though the Inciſion ſhould be made, yet the Fleſh becomes ſo luxuriant, or indurated and callous, that not only part of the Lips muſt be extirpated, where it can be done with Safety, for which Purpoſe the Affair muſt be duly conſidered, by Inſpection, Feeling, and a *Speculum Uteri*; but the fungous Fleſh muſt be conſumed by corroſive and deſiccative Medicines, and repreſſed by proper Tents, and leaden Pipes, till the Paſſage be ſufficiently enlarged, and the Sides perfectly healed; otherwiſe the Vagina will eaſily reunite, and render all this troubleſome Procedure ineffectual. In Caſes of this Kind, *Roonhuyſen* and *Becker* may be conſulted, who illuſtrate this Affair with various Obſervations and Examples. *Roonhuyſen*, alſo, delivers a Method of opening the internal Orifice of the Womb, when obſtructed: But as almoſt all Acceſs is denied to this Part, this Operation appears ſcarcely practicable, and extremely dangerous; nor does it ſeem poſſible to preſerve the Opening. *Heiſter Chirurg.*

The Method of removing Tubercles, Caruncles, and other Excreſcences of the Vagina.

Sometimes Excreſcences of different Kinds, Sizes, and Figures, grow not only on the external Parts of the Vagina, but, alſo, internally, both in the anterior and poſterior or ſuperior Parts. Some of theſe Excreſcences reſemble a Muſhroom; others, a Fig; others, a Pear; and ſome, the Clapper of a Bell: And ſometimes they increaſe to ſuch a ſurpriſing Degree, that thoſe of the laſt-mentioned Figure will reach to the Knees; which are not only great Obſtructions to Copulation, and the Birth, but occaſion intenſe Pain, and even threaten a Gangrene or Cancer, if not timely removed: When they are very large, they are, by ſome, called *Sarcomas of the Womb*. *Celſus* and *Tulpius* call them ſimply *Fungi*; but *Solingen* terms them *Fici*, adding, though improperly, the Epithet *cancerous*, becauſe they admit of an eaſy Cure. The nearer they are ſituated to the Orifice of the Vagina, the more eaſily are they removed; but the Taſk is very difficult when they lie deep; ſo that *Tulpius* calls it a very uncommon Operation. Some have taken Excreſcences of this kind for a Falling-down of the Womb, but without Foundation.

The ſame Method of Cure muſt be followed here, that is generally obſerved in removing Tubercles and *Sarcomas*, or fleſhy Excreſcences, by the Ligature; by the Knife, or both; or by corroſive Medicines. But particular Care muſt be taken, not to miſtake a *Prolapſus Uteri* for an Excreſcence of this kind.

But,

But, becauſe theſe Diſorders of the Vagina are not only nearly related to a Polypus of the Noſtrils; but are ſometimes ſo deeply ſituated, near to the Uterus, and ſometimes proceed from the Uterus itſelf, that they cannot be extirpated by the Methods above propoſed, *Fabricius ab Aquapendente*, and *Dionis*, thought it neceſſary to uſe the Forceps recommended in extracting Polypuſes of the Noſe, (ſee *Tab.* XL. *Fig.* 9. 10. 11.) with which Inſtrument the Excreſcence may be twiſted off. But, before this Method be attempted, particular Circumſpection muſt be uſed, to ſee whether the Patient is not expoſed to greater Injuries by the Operation. *Voelters*, a *German* Surgeon, informs us, that he has removed many of theſe Excreſcences, of various kinds, with a red-hot Knife; but I am ſo far from recommending his Example to others, that I rather think it ought to be abhorred, as cruel and dangerous. *Solingen* relates, that he happily extirpated a cancerous Excreſcence in the Vagina of a Woman, who recovered in a ſhort time. *Obſ.* 29. But he gives no Account how he performed the Operation; nor any Reaſon why he called the Diſorder *cancerous*. *Heiſt. Chir.*

The Method of treating a Prolapsus Uteri, or Falling-down of the Womb.

That a *Prolapſus Uteri* is an Impoſſibility in Nature, was not only alleged, but obſtinately maintained, by ſome Phyſicians of the laſt Century: Among theſe were *Mechren*, *Roonhuyſen*, *Van Horne*, *Barbette*, *Vander Beche*, *Kerkringius*, *Verduc*, and others. But that the *Uterus* is ſometimes protruded from the *Abdomen*, through the external Orifice of the Vagina, is manifeſt from the Obſervations of the moſt experienced Phyſicians, both antient and modern: Of this Number are, *Aetius*, *Ægineta*, *Roſſet*, *Fabricius ab Aquapendente*, *Berengarius*, *Paré*, *Hildanus*, *Solingen*, *Mauriceau*, and many others. The celebrated *Ruyſch*, in his *Obſ.* 1. 7. 9. and 10. has clearly explained this Affair, and illuſtrated it with elegant and diſtinct Figures; two of which we have repreſented in *Tab.* LV. *Fig.* 2. and 3. Next to him is *Saviard*, a Surgeon of *Paris*, who gives ten Caſes obſerved by himſelf; then *Jo. Mau. Hoffman*, a Phyſician of *Altorf*; *Schacherus*, a celebrated Phyſician of *Leipſic*; *Slevogtius*, *Vaterus*, and *Buggravius*, who all certified the Truth of this Diſorder, and deſcribed it from Caſes of which they were Eye-witneſſes. And I myſelf have ſeen Inſtances of this kind. When the Womb only bears down upon the Vagina, it is called a *Deſcenſus Uteri*; but when it is protruded without the Vagina, it is denominated a *Prolapſus*, or *Procidentia Uteri*. Of the *Prolapſus Uteri* there are two Kinds; one happens without an Inverſion of the Womb, when the internal Orifice of the Uterus appears at the Extremity of the prolapſed Part, as in *Fig.* 2. *Lit.* C; the other with an Inverſion of the Womb, when the internal Orifice of the Uterus does not appear (ſee *Fig.* 3.), as has been teſtified by the above-quoted Authors.

An inverted and non-inverted Uterus may be diſtinguiſhed, as we juſt now obſerved, by the Orifice of the Womb, which appears when the Uterus is not inverted, as in *Tab.* LV. *Fig.* 2. C; and by this Sign, alſo, it may be known from a Bearing-down, or from fungous Excreſcences of the Vagina. But it is not unworthy of Obſervation, that *Widemannus* not only deſcribed, but beautifully and clearly delineated, a ſingular *Prolapſus* of the whole internal wrinkled Coat of the Vagina, with an Orifice ſo nearly reſembling that of the Uterus, that none could have doubted it, before the Body was opened; when the Uterus was found in its proper Place, and only the wrinkled Coat of the Vagina prolapſed. And that Phyſicians may more prudently diſtinguiſh theſe Diſorders, and not raſhly miſtake a *Prolapſus Vaginæ* for a *Procidentia Uteri*, I thought it not improper to repreſent the Figure given us by *Widemannus*, in *Ephem. Nat. Cur. Cent.* VIII. *Obſ.* 98. though not ſo large as the Life. See *Tab.* LV. *Fig.* 4. The Appearance, therefore, of an Orifice in ſuch a *Prolapſus* (ſee *Lit.* F) is not an infallible Sign of a *Prolapſus Uteri*, as has been generally repreſented; but the prolapſed Part muſt be carefully conſidered, till it can be certainly known, whether it be the *Vagina* or *Uterus*. *Widemannus*, indeed, produces no pathognomic Sign, by which the Vagina, in this Caſe, may be aſſuredly diſtinguiſhed from the Uterus; but he ſays, that when he introduced his Probe into the Perforation F, which ſo nearly reſembled the Orifice of the Uterus, that it penetrated much deeper than the Cavity of the Womb, almoſt the Length of half a Foot: But whether this Sign always appears, remains to be proved by future Experiments. This Obſervation of *Widemannus* ought to be frequently read, and carefully conſidered.

A Prolapſus of the Uterus, and one of the Vagina, are difficult to be certainly known, as well as to be diſtinguiſhed from one another. We have a remarkable Inſtance of this kind in the Phyſicians and Surgeons of *Tholouſe*, and many of thoſe at *Paris*, who imagined a Girl about thirty, who, from her Childhood, had been troubled with a *Prolapſus Uteri*, to be an Hermaphrodite; and publickly declared, that in this Hermaphrodite the Male Sex was predominant. Upon this Declaration, the Parliament of *Tholouſe* ordained the reputed Hermaphrodite to lay aſide female Apparel, and aſſume a maſculine Dreſs, under a ſevere Penalty, if ſhe refuſed. But when *Saviard* had narrowly examined her at *Paris*, he found her to be really a Girl, and, by reſtoring the Uterus to its natural Situation, metamorphoſed her into her proper Sex; and, by the King's Command, ſhe was ordered to dreſs accordingly. The inconſiderate Judgment of the *Tholouſians* more plainly appears from this diverting Relation, of *Saviard*, in *Obſ.* 15. who aſſures us, that ſhe had no Reſemblance either of a *Penis* or Teſticles, Appendages which, in my Opinion, are abſolutely neceſſary to the Formation of a Man; beſides her Breaſts were large, and her Face was entirely female, without a Beard.

This Diſorder proceeds from a Relaxation and Weakneſs of the Ligaments of the *Uterus* and *Vagina*; whence it is obſerved frequently to follow a difficult Birth, or other violent Efforts; though Virgins and Girls are ſometimes affected with it. Another Species of Prolapſus is, when the prolapſed Uterus is inverted like a Bag, with its interior Side turned outwards, and then the Orifice of the Womb does not appear, but is concealed in the Vagina. See *Fig.* 3. B. Of this Kind of Prolapſus we have, among others, a remarkable Inſtance, deſcribed by *Genſelius*. In this Caſe, the prolapſed Uterus reſembles a Mole, or a bloody and unſeemly fleſhy Excreſcence; and, therefore, it is not ſurpriſing, that ſome unſkilful Surgeons and Midwives have miſtaken the Diſorder, and by rude Treatment, endeavouring to extract the Womb by Force, bring the Patient's Life into extreme Danger. This miſerable Diſorder ſeldom happens, except when the Uterus is extracted with the Secundines; or immediately after a difficult Delivery, when the internal Orifice of the Womb is ſo dilated, that the Body of the Uterus is eaſily tranſmitted through it; or, laſtly, when the Patient is ſo ſtrained by the Labour-pains, or by the Continuance of the Throes after Delivery, that, by a vehement Effort the Uterus ſlips through its internal Orifice, and is forced without the *Labia Pudenda*. But from whatever Cauſe the Diſorder proceeds, unleſs it be quickly reſtored to its natural Situation, as the above-mentioned Authors have obſerved, a ſudden Death is generally the Conſequence; and, therefore, any Delay muſt be extremely dangerous.

In this Species of a prolapſed Uterus, the Surgeon or Midwife muſt, in the firſt Place, take care that the Patient evacuate her Urine, leſt the Repletion of the Bladder ſhould obſtruct the Reduction of the Uterus: Then the Patient being laid on her Back, with her Hips elevated, and Thighs diſtended, the Secundines, if they ſtill adhere, muſt be cautiouſly removed by the Fingers, and the Uterus, with all poſſible Expedition, gently reſtored, by the Hand, to its former Situation. This Operation may be moſt conveniently performed, by tenderly returning into the Vagina the lower Part of the prolapſed Uterus, at *Fig.* 3. C, with the three firſt Fingers, and, then, with the whole Hand, into its natural Place in the Cavity of the Abdomen; then, contracting the Hand into the Form of a Fiſt, it muſt be retained there, till the Uterus is reduced to its uſual Figure, and, then, gently contracted: Theſe Particulars are more eaſily executed immediately after the Delivery, while the Orifice of the Womb, and the Vagina, are preternaturally dilated. The Uterus being thus replaced, and reduced to its former Figure, the Patient ſhould be laid on her Back, in Bed, and earneſtly exhorted to keep her Legs cloſe, and to diſpoſe herſelf for Reſt; for by procuring Reſt, and keeping this Poſture, the Cure may often be completed, without any other Aſſiſtance. Nor will it be improper to cloſe up the Orifice of the Vagina with Compreſſes, and a proper Bandage, leſt, by Streſs of Pains conſequent to the Birth, by Coughing, or by Sneezing, the Uterus ſhould be again prolapſed: Thus will the Orifice of the Uterus be gradually contracted, ſo as to afford no Paſſage for the Uterus, and, conſequently, the Diſorder be removed. If the Uterus be not quickly returned, according to *Hildanus*, *Stalpart*, *Ruyſch*, *Saviard*, and other Authors above-quoted, ſudden Death muſt be the Conſequence: For the Orifice of the Womb is, by Degrees, ſo conſtricted by the ſuperior Part of the Uterus, that an Inflammation is induced, and the Reduction of the Womb becomes impracticable; and a Sphacelus is occaſioned by the ſtagnated and corrupt Blood, and the Patient ſuffers a miſerable Death. But if the Caſe be not deſperate, when the Surgeon is called, Care muſt be taken to free the Uterus from its Inflammation, and to reſtore it to its proper Place with all poſſible Expedition: For this Purpoſe it is, in the firſt place, neceſſary to bleed her copiouſly; and then ſhe ſhould diſcharge her Urine, that no Obſtruction may be occaſioned by the Diſtention of the Bladder: Then let the Patient be laid in the ſame Poſture as is above directed; and then let the Uterus be carefully fomented with warm Milk and Water,

and anointed with Butter, or warm Oil; or let digeſtive and emollient Fomentations, or Cataplaſms, be ſo long applied, till the Part becomes ſoft and ſlippery, and capable of being replaced by the Method already directed. For unleſs this Reduction can be ſeaſonably accompliſhed, the Preſervation of the Patient becomes impracticable; nor will the Extirpation of the Uterus, by Ligature or Abſciſſion, as ſome have imagined, ought avail. *Ruyſch* relates a Caſe, in which a Surgeon removed by Ligature a prolapſed Uterus, but without Succeſs; for the Patient ſoon died.

But here I think it may be worthy of Conſideration, whether Scarification may not be advantageouſly attempted in ſuch deſperate Caſes, when the Uterus is ſwelled and inflamed, as in other violent Inflammations of a cancerous Diſpoſition, which to me ſeems not improbable.

That Species of Prolapſus in which the Uterus is not inverted, but its internal Orifice appears, which is not always the Conſequence of a difficult Birth, but is often produced by a Weakneſs of the Ligaments, is not attended with ſuch unhappy Conſequences. By the Appearance of the internal Oriſice of the Womb, this *Prolapſus Uteri* may, alſo, be diſtinguiſhed from fungous Excreſcences, or Tubercles of the Vagina, as was already obſerved. In this Caſe the Danger of an Inflammation, or Sphacelus, is not ſo much to be apprehended, as in the former Kind. This Species of *Prolapſus Uteri* is not only incident to Women after a difficult Labour, but, alſo, to others, to the chaſteſt Virgins, and even young Girls, according to the Obſervations of *Mauriceau*, *Saviard*, and others. But if this Diſorder be for ſome time neglected, not only great Uneaſineſs is occaſioned, but a Difficulty of Urine, violent Pains of the Hips, Exulcerations of the prolapſed Uterus, and an Inflammation followed with a Sphacelus, Scirrhus, or Cancer. And the longer the Uſe of proper Remedies is delayed, the more difficult is the Reduction of the Uterus, becauſe it becomes ſwelled and enlarged, and cannot be retained in its natural Situation, without proper Inſtruments. For a Relapſe can ſcarcely be prevented, either in Walking, or in ſome Commotion of the Body; or in Sneezing and Coughing, eſpecially if not ſuſtained by a proper Bandage or Inſtrument. But if the prolapſed Uterus be affected with a Cancer, or Gangrene, the Reduction ought not to be attempted: For *Ruyſch* informs us, in *Obſ.* 9. that, after it is replaced, more intenſe Pains, and other malignant Symptoms, are induced.

If, therefore, there be no Appearance of a Gangrene, or Sphacelus, two Intentions are neceſſary to be anſwered in the Cure: 1. That the Uterus be reſtored to its proper Place. 2. That a Relapſe be prevented. With regard to the firſt Intention, if the prolapſed Uterus has not been of long Duration, or greatly increaſed in Bulk, it may be eaſily replaced by the Method already directed: Let the Head be laid low; the Buttocks elevated; the Legs ſpread wide; and the Womb gently replaced with the Fingers, or a ſtrong Wax-candle. It has been often obſerved, that Women troubled with this Diſorder can replace the Uterus themſelves, without any Difficulty. But if the Diſorder be inveterate, and the Uterus enlarged, ſo that it cannot be without Difficulty reduced, digerent Fomentations muſt be applied, and the Bladder and Inteſtines emptied, that it may be the more eaſily reſtored to its natural Situation. But as the Uterus can ſcarcely be ſuſtained by the Coats of the Vagina, and its own relaxed, debilitated Ligaments, great Care, as well as proper Bandages and Inſtruments are required to prevent a Relapſe. For this Purpoſe it will be expedient to reſt ſome Days in Bed, and to convey the Steams of ſtrengthening Suffumigations through the Vagina, with a proper Funnel and Pipe (ſee *Tab.* LV. *Fig.* 14.): Aromatic and aſtringent Fomentations, prepared with Spirit of Wine ſhould, alſo, be injected with a Syringe. Then putting a Compreſs on the external Orifice of the Vagina, carefully apply the T Bandage. When the Uterus is greatly ſwelled, it ought to be fomented with Digeſtives, till its Bulk be diminiſhed, and then it may be replaced. If the Uterus be exulcerated, as frequently happens, the Reduction of it ought not to be delayed upon that Account: For *Saviard* obſerves, that theſe Ulcers are much eaſier healed when the Part is reſtored to its proper Situation, than when it is preternaturally prolapſed. This Author, alſo, relates an Inſtance of a *Prolapſus Uteri* in a Virgin, who had, at the ſame time, a Stone in her Bladder: In this Caſe he firſt replaced the Uterus, and then extracted the Stone, and relieved her from both Diſorders, only uſing a Peſſary. See his *Obſ.* 15.

If the Diſorder is already become ſo inveterate and obſtinate, that the Uterus cannot be retained by the Methods already propoſed, there remains but one Reſource; to which Recourſe is commonly had; and that is, to repreſs the Vagina, by introducing a Peſſary. The beſt Sort of Peſſaries are made of Box, Aſh, or other hard Woods, or of Cork, and covered with Wax, having a Perforation in the Middle (See *Tab.* LV. *Fig.* 6. 7. 8. 9.). Without the Wax they would ſwell, rot, and produce many Inconveniences, ſo as not to be, without Difficulty, extracted, and, perhaps, by Pieces. Thoſe who can afford the Expence, may have them made of Ivory, or of Silver or Gold excavated: Thus a Peſſary of a proper Size and Shape, muſt be carefully preſſed by the Fingers, deep into the Vagina, even to the Orifice of the Uterus, that it may not eaſily fall out; having a String faſtened to it, (ſee *Tab.* LV. *Fig.* 6. and 10.) by which it may be extracted and cleaned. The String ſhould, alſo, be tied to any Belt about the Waiſt, leſt, by happening to fall out, when the Patient walks, it ſhould indecently drop upon the Ground. A Peſſary is judged to be of a proper Size, when it is not eaſily admitted at firſt, that it may more firmly remain, and better repreſs the Uterus; but, in ſome Caſes, Peſſaries twice as large as theſe are required. The Perforations in Peſſaries are deſigned for a Paſſage for the menſtrual Blood, and other Sordes, diſcharged from the Womb; and, therefore, thoſe Peſſaries which are of an oval or pyramidal Form, are not ſo convenient; ſuch as thoſe of a prodigious Size, recommended by *Paré*, *Hildanus*, *Scultetus*, *Roonhuyſen*, and others: Beſides, theſe perforated Peſſaries will admit the *Semen* for Procreation, and, alſo, the ſtrengthening Suffumigations and Injections, ſo neceſſary in theſe Caſes. When theſe Peſſaries are rightly made, they are ſo far from being troubleſome, that when once Women have been accuſtomed to them, they retain them without the leaſt Uneaſineſs. It is proper to obſerve, that ſome Women, who have been affected with this Diſorder, have been freed from it upon their becoming pregnant, by reaſon of the Dilatation of the Womb. See *Pechlinus*, *Obſ.* 20. and *Saviard*, *Obſ.* 12. But *Mauriceau*, *Schelhammer*, *Hunerwolf*, *Saviard*, and others, prove that this is not always the Caſe; but the Orifice of the Womb, with the Head of the Fœtus, may be felt without the Vagina.

Saviard prefers a kind of elaſtic Steel Peſſary before all others; but as he gives no Deſcription of it, Nobody can know what he means. But *Goelicke*, in a Diſſertation publiſhed at *Halle*, in 1710. deſcribes a new Method of curing a *Prolapſus Uteri*, in which he recommends an elaſtic Peſſary, made of Iron-wire, and wreathed into a conical Form: He, alſo, gives a ſmall Repreſentation of it; but does not explain its proper Length or Thickneſs. But in *Tab.* LV. *Fig.* 11. theſe Faults are corrected, where it is repreſented of a convenient Size: He directs the Inſide to be covered with Lint, and the Outſide with thin ſoft Leather; and orders a String to be faſtened on each Side of the Baſis of the Cone, that it may be eaſily extracted. When it is to be introduced, it ought to be a little compreſſed; ſo that, after it is placed, it expands itſelf, by its elaſtic Force, and is thus firmly retained, without any Danger of falling out: He owns indeed, that he never experienced the Effects of this Peſſary, but, as it has all the Qualities neceſſary for the Formation of a good Peſſary, he does not doubt of its Excellency. But as I am afraid, that, in ſo moiſt a Place, ſuch a Peſſary ſhould ſoon be corroded by Ruſt, to which Iron is particularly ſubject, I have, therefore, always uſed the wooden Peſſaries, repreſented in *Fig.* 6. 7. and 8. which I have found to anſwer the End. *Heiſter Chir.*

The Method of treating a Bearing-down of the Vagina.

A Bearing-down of the Vagina has not only been confounded with a Bearing-down of the Uterus, by ignorant Midwives, but, alſo, by Phyſicians and Surgeons of Learning and Experience; and theſe different Diſorders have, likewiſe, been confounded with the ſame Denomination: But they may be diſtinguiſhed from one another; partly by conſidering the anatomical Structure of the Parts; and partly, by attending to the diagnoſtic Signs above obſerved. The Vagina is ſaid to be prolapſed, when the Whole, (as in *Tab.* LV. *Fig.* 4.) or only Part of it, being relaxed, by whatever Cauſes, hangs without the Pudenda. Sometimes the whole Vagina is prolapſed, and appears like crude bloody Fleſh, reſembling a thick fleſhy Ring, more or leſs ſwelled, according to the different Cauſes of the Diſorder, and other Circumſtances. If the prolapſed Vagina ſwells violently, and is attended with Inflammation, as I have ſometimes obſerved, after a difficult Labour, there is immediate Danger of a Sphacelus: If the prolapſed Part be affected with little or no Swelling; or if the Tumor be unaccompanied with Inflammation, the Diſorder may long be born, without Trouble, and without Danger. Sometimes a Part of the Vagina is preternaturally prolapſed out of the Pudenda, and may be produced by lifting too great Weights; or by an Effort in a difficult Birth; or by a Congeſtion of peccant Matter, reſembling a large Fungus, or a *Prolapſus Uteri*. Many plain Inſtances of this Diſorder have been obſerved: And *Meekren* has related, and illuſtrated with Figures, a very remarkable Caſe in *Cap.* 54. of his Obſervations. This kind of Diſorder may not only be taken for a *Prolapſus Uteri*; but rather

rather for a Tumor, as a *Fungus*, *Ficus*, *Sarcoma*, or fleſhy Excreſcence; and, therefore, it may be thought neceſſary to remove it by a Ligature, or by Abſciſſion. But to diſtinguiſh this Diſorder from a *Prolapſus Uteri*, or a Tubercle of the Vagina, it is neceſſary to obſerve, that an inverted *Prolapſus Uteri* never happens, unleſs immediately after Delivery; but Tubercles of the Vagina, or any Part of it, may be produced at any Time beſides that of Delivery, and increaſe gradually, and, as it were, imperceptibly. Though I obſerved in the Year 1720, in a Lady of Quality, ſuffering under a difficult Labour, that whilſt the Fœtus was yet in the Womb, Part of the Vagina was ſuddenly prolapſed, and within twenty-four Hours a Fungus or Tubercle appeared, equal to the Size of two Fiſts, which ſoon became ſphacelous; and, though the Child was ſafely brought forth, the unhappy Mother died within eight Days. Hence, then, it is not ſurpriſing, that ſome Phyſicians, not having ſufficiently conſidered the Signs by which a *Prolapſus Uteri* may be diſtinguiſhed from a *Prolapſus Vaginæ*, have, therefore, aſſerted, that a prolapſed Uterus may ſometimes not only be extirpated without endangering Life; but that thoſe very Women, though deprived of the Womb, may afterwards conceive and bring forth Children. That, after the Extirpation of a Tubercle of the Vagina, as in *Fig.* 5. or where the whole internal corrugated Coat of the Vagina falls down, like a *Prolapſus Uteri*, thoſe Women may afterwards conceive, and bring Children, was never denied: But it is abſolutely impoſſible, that, after the Uterus is extirpated, a Woman ſhould conceive; and, therefore, theſe Relations may juſtly be accounted fabulous.

How Tubercles reſembling a *Prolapſus Vaginæ* may be removed, we have already explained: But when the Vagina appears prolapſed, like a large bloody Ring, hard and inflamed, unleſs it be ſeaſonably reſtored to its proper Place, there is great Danger of the prolapſed Part being affected with a Gangrene, or Sphacelus: But the Danger is leſs, if the prolapſed Part be flaccid, and not inflamed. If no Inflammation appears, the Vagina ſhould be reſtored to its natural Situation with the Fingers, or a thick Wax-candle, and then fomented with ſtrengthening and digerent Medicines: Then the Patient ſhould be ordered to reſt in Bed for ſome Days, keeping her Legs cloſe, or croſſed. Mean while the Part ſhould be fomented with Decoctions of ſtrengthening, digerent, aromatic, and aſtringent Herbs, with Red-wine; or with Lime-water, mixed with Spirit of Wine: Suffumigations, alſo, of Maſtich, Olibanum, Myrrh, Amber, and the like, ſhould, alſo, be conveyed into the Vagina with a proper Pipe (ſee *Tab. LV. Fig.* 14.) and Funnel; then let the Part be carefully bound with the T Bandage. Thus may the prolapſed Vagina be reſtored to its natural Vigour, eſpecially if the Diſorder be recent, and, if proper internal Medicines be exhibited: For this Purpoſe, the medicated Waters, hot Baths, and chalybeate Waters, are excellent. But if the Diſorder be ſo inveterate as not to yield to the Remedies here propoſed; it muſt, therefore, be palliated, and the Patient be ordered to wear the T Bandage conſtantly; by which means the Danger of a Scirrhus, or Gangrene, may be averted.

But if the prolapſed Part be ſeized with an Inflammation, the Inflammation muſt be removed, not only by the Application of diſcutient Fomentations and Cataplaſms externally, but, alſo, by the Exhibition of proper internal Medicines, not omitting Veneſection, before the prolapſed Vagina can be reſtored to its natural Poſition, otherwiſe a Gangrene might be induced, which would ſoon be followed by the Death of the Patient. But if the Inflammation be mild, the prolapſed Part may be reduced without Danger, as the natural Heat of the Body will greatly contribute to diſcuſs the Tumor. But if a Sphacelus, or Fungus, already appears upon the prolapſed Vagina, which may be known from its Blackneſs and fetid Smell, the morbid Part muſt be ſcarified; digeſtive Fomentations and Cataplaſms applied; and whatever elſe is neceſſary in the Cure of a Sphacelus. *Heiſter. Chirurg.*

VAGINALIS TUNICA. A Coat of the Teſtes; another of the Œſophagus, and another of the Spinal Marrow, are called by this Name.

VAGITUS. The Bewailings or Moanings of Children, when out of Order.

VALENTIA SCABIOSÆ. *Powers of Scabious.*

Take of the Juice of green Scabious, preſſed out, and ſtrained through a Cloth, and of Hogs-lard, cleared of its Membranes, each as much as you pleaſe: Let the Lard be beat in a Stone Mortar, and the Juice poured in by little at a time, for the Conveniency of Mixture, and giving its Tincture: Then put them together into a proper Veſſel, to be expoſed to the Sun, and ſo that the Juice may cover the Lard: After nine Days, put them again into the Mortar as before, and throw away that thin and diſcoloured Humidity, which ſeparates upon beating, without rubbing them together; and again put it into its Veſſel for five Days: Afterwards beat it again, and by a little at a time, mix with it freſh Juice of Scabious; and after a freſh Inſolation of fifteen Days, in its proper Veſſel, in the Sun, let it be cleared before of its watry Humidity. Let it then ſtand again in the ſame manner, for fifteen Days longer, with freſh Juice; and, after a little Beating, let it be kept for Uſe, in a glaſs or earthen Veſſel.

This, we are told by the firſt Compilers of the College Diſpenſatory, was the Contrivance of *John Arden*, an experienced Surgeon at *Newark*, in *Nottinghamſhire*, who lived in the Reign of *Edward* the Third. After Inſertion of this, which they had from an antient Manuſcript, they particularly direct to repeat the Proceſſes with freſh Juice, till the Lard looks of a deep Green; and that is made the Meaſure of the Repetitions neceſſary.

VALERIANA.

The Characters are;

The Leaves are conjugated: The Stalk is florigerous, and divided as in umbelliferous Plants: Under the Umbellæ, both large and ſmall, are two long ſmall Leaves: The End of the Pedicle ſhoots forth two ſmall ſimilar Leaves, which ſupply the Place of a Calyx: From the Centre of the Area of the Pedicle, within theſe Leaves, proceeds an oblong Ovary, on whoſe fimbriated Apex grows a monopetalous, Funnel-ſhaped, naked Flower, furniſhed with three Stamina, proceeding from the internal Sides of the Flower: The Tube of the Flower, from its lower Part, where it adheres to the Ovary, frequently ſhoots forth a blind Spur at the Side: The Seed is oblong, depreſſed, running out narrow, almoſt flat and downy: From the Centre of the Apex of the Ovary ſhoots forth a long Tube.

Boerhaave mentions thirteen Species of Valeriana; which are,

1. Valeriana; major; hortenſis. *Boerh. Ind. alt.* 74. *Phu majus, ſive Valeriana major.* Offic. Park. 119. *Valeriana hortenſis.* Ger. 917. Emac. 1075. *Valeriana hortenſis, Phu Oluſatri folio Dioſcoridis.* C. B. P. 164. Tourn. Inſt. 132. *Valeriana major odorata radice.* J. B. 3. 209. Raii Hiſt. 1. 388.

GARDEN VALERIAN.

The Root of the Garden Valerian is about a Finger thick, of a brown Colour, growing not deep in the Earth, but ſpreading itſelf acroſs, with many large white Strings on each Side, which makes the Root appear, like a large Scolopendra, or Catterpiller with many long Feet, of a very ſtrong Smell, eſpecially when dry: It ſhoots out ſeveral hollow chanel'd Stalks, two or three Feet high, having the lower Leaves long and round-pointed; ſome whole, and others cut in, reſembling thoſe of Scabious, but that they are ſmooth: The Leaves, which grow on the Stalks, are, alſo, much more cut in: The Stalks are divided towards the Top into ſeveral Branches, having, at each Divarication, a long narrow Leaf; and at the Ends grow the Flowers, in a kind of Umbels, each Flower being a ſmall, long, narrow Tub, divided at the Top into five Segments, with as many Apices of a white Colour; they ſtand on the Rudiments of the Seed, which, when they are fallen, grow larger, being longiſh, ſtriated with a downy Top. It is uſually planted in Gardens, though it grows wild in the *Alpine* Countries. The Roots are principally uſed.

They are alexipharmic, ſudorific, and cephalic; and are accounted uſeful in malignant Fevers, and peſtilential Diſtempers: They help the Head and Nerves, provoke Urine, and bring down the Menſes.

They are one of the Ingredients of the *Theriaca* and Mithridate. *Miller's Bot. Off.*

The Root and Herb are alexipharmic, ſudorific, and diuretic: Their principal Uſe is in Weakneſs of the Sight, Peſtilence, Aſthma, inveterate Cough, being boiled with Liquorice, Raiſins, and Aniſe, in the Pleuriſy, Obſtructions of the Liver and Spleen, Jaundice, Stoppage of the Ureters, Hernia, and the like. Outwardly they ſtrengthen the Sight, abſterge Specks, and Films, being boiled in Wine or Water, and inſtilled by Drops: They eaſe the Head-ach, provoke the Menſes and Sweating, being uſed in Baths: In Suffumigations they dry up Rheums, and correct the Malignity of Buboes and Carbuncles, extract Bullets or Arrows, and cleanſe inveterate Ulcers. Thus far *Schroder*: And indeed he has ſaid enough, if not too much, in its Praiſe. It is certainly, however, a potent Diuretic.

The Powder of the Root, which grows ſpontaneouſly, before it produces a Stalk, taken once or twice, to the Quantity of half a Spoonful, in Wine, Water, Milk, or any other proper Juice, cures the Epilepſy; for it purges upwards and downwards. *Sylvius* thinks, that more is to be aſcribed to this Plant, than to Peiony, on account of its abounding with a volatile Salt. It is uſual with us in *England*, to apply the bruiſed Leaves to

Wounds, when but slight; whence it is called by some *Cutfinger*. *Raii Hist. Plant.*

2. Valeriana; sylvestris; major. *Ger.* 917. *Emac.* 1075. *Park.* 122. *C. B. P.* 164. *Raii Hist.* 1. 388. *Synop.* 3. 200. *Tourn. Inst. Boerh. Ind. A.* 74. *Valeriana sylvestris.* Offic. *Valeriana sylvestris magna aquatica.* J. B. 3. 209. *Phu Dioscoridis verior.* Col. Ecph. 1. 210. GREAT WILD VALERIAN.

We have two Species of this great wild Valerian; the first has a Root divided into several white thick Strings, growing more downward, and less spreading than the other; of no great Scent, when just taken out of the Ground, but smelling very strong when dry. The Stalks arise to be about a Yard high, hollow and chanelled, having several long winged Leaves, whose Pinnæ are long, sharp-pointed, and serrated about the Edges, high-veined, and somewhat hairy; the Leaves, which grow higher on the Stalks, are narrower, and less serrated. The Flowers are, in Shape, like those of the Garden Valerian, of a pale-purple Colour, and having the like Seed. This grows in Woods, and dryer Places than the other, which is larger, taller, the Root more spread out; the Leaves are larger, smoother, of a deeper shining Green, with broader Pinnæ; the Stalks grow taller; the Flowers are much alike. This grows in watery Places, and near Ditches, both flowering in *May*. The Root of this has as strong a Smell as the other; they are both used promiscuously, though the former seems to come nearest *Columna*'s Figure and Description in his *Phytopinax*.

They are come much into Use of late, in Diseases of the Head, and all nervous Affections. *Miller's Bot. Off.*

The Leaves of this Plant have no Smell, but an herby, saltish, bitter Taste, and give a pretty deep Tincture of Red to the blue Paper; the Roots stain it a little; they are bitter and styptic, of an aromatic penetrating Smell, and something disagreeable. This Plant has a volatile aromatic oily Salt, loaded with a Part of the Acid of the Sal Ammoniac; whereas the artificial volatile oily Salt of this Acid, is detained by the Salt of Tartar.

Thus the wild Valerian is anti-epileptic, sudorific, hysteric, and emmenagogic: It gives great Relief to those troubled with the Asthma, or Vapours: *Camerarius* commends it very much for the Jaundice; and *Fabius Columna* for the Epilepsy; who acknowledges himself to have been cured of the Epilepsy by this Root; and that he had seen several other Persons cured by it: He advises to pull it up before it pushes forth its Stalks, to reduce it to Powder, and swallow half a Spoonful of it in Wine, Water, Milk, or any other Liquor: It may be given to Children, and all Persons that have convulsive Fits. I have seen it have great Efficacy in the hysteric Passion, and most violent Paroxysms of the Asthma. Pour a Pint of boiling Water upon an Ounce of the Roots of this Plant; remove the Pot from the Fire; cover the Infusion well; and give it to drink by Glassfuls. The Extract of these Roots is good for the same Diseases: They give a Scruple of it with a Grain of Laudanum, or else mix the Laudanum with half a Scruple of the Powder of these Roots. *Martyn's Tournefort.*

It is effectual in Convulsions, Ruptures, and Bruises by Falls, as, also, for Inflammations, and Exulcerations of the Mouth and Gums, and the Aphthæ, *H. Ox.* and cures a Tertian Fever. *Schw. Dale.*

A Dram of the Powder of the dry'd Roots, taken in Wine, purges upwards and downwards. Dr. *Mead*, in his Book *de Imperio Solis & Lunæ*, highly commends the Root of this Plant against the Epilepsy.

3. Valeriana; major; sylvestris; montana. *C. B. P.* 164.
4. Valeriana; foliis Calcitrapæ. *C. B. P.* 164.
5. Valeriana; foliis Calcitrapæ, magis dissectis.
6. Valeriana; palustris minor. *C. B. P.* 164. *Tourn. Inst.* 132. *Boerh. Ind. A.* 74. *Phu minus & Valeriana minor.* Offic. *Valeriana minor.* Ger. 916. Emac. 1075. Raii Hist. 1. 388. *Valeriana sylvestris minor.* Park. 122. Raii Synop. 3. 200. *Valeriana minor pratensis vel aquatica.* J. B. 3. 211. SMALL VALERIAN.

The Roots of this Valerian are long, slender, and creeping, sending out a few small white Fibres. The Leaves which spring from them, before the Stalks run up to Flower, are almost round, but somewhat pointed. The Leaves which grow on the Stalks, are like those of the Garden-kind, but less. We have two Species of this Valerian, one whereof rises higher than the other, having usually three Pair of Leaves set opposite; the Umbels of Flowers grow closer, and the Flowers are a great deal smaller, than the other, which arises not so high, and has usually but two Pair of Leaves on the Stalks. The Flowers are much larger, and like the Garden Valerian, but of a pale-purple Colour, as are, also, the former. They grow both promiscuously in marshy Grounds, and moist Meadows, as in *Battersea Field*, near the *Thames*, in great Plenty, flowering in *May*.

I know no particular Virtue this Species of Valerian is endowed with, Authors having said but little about it; neither is it ever used in the Shops that I know of. *Miller's Bot. Off.*

The Parts in Use are the Root and Leaves, which as they resemble those of the *Great Wild Valerian* in outward Appearance, so are they supposed to agree with them in Virtues, tho' in an inferior, or milder Degree. *Dale.*

7. Valeriana; sylvestris; vel palustris; altera; flore minore densius stipata. *Raii Synop.* 98.
8. Valeriana; tuberosa. *J. B.* 3. 2. 207.
9. Valeriana; rubra. *C. B. P.* 165.
10. Valeriana; marina; latifolia; major; alba. *M. U.* 50.
11. Valeriana; rubra; angustifolia. *C. B. P.* 65.
12. Valeriana; maxima; Pyrenaïca; Cacaliæ folio. *Fagon. T.* 131.
13. Valeriana; Lusitanica; latifolia; annua; laciniata. *T.* 132. *Boerh. Ind. alt. Plant.*

The first is the true *Phu* of *Dioscorides*, and the Antients; and takes that Name either from the *Greek* Word φύω, *(phyo)* to grow, or spring from, or from *Phy*, a *Pontic* Word, denoting the penetrating Smell of its Root. But it is erroneously affirmed to be the *Herba Saracenica*, for healing of Wounds; for the Taste shews the contrary; for it is aromatic, penetrating, and somewhat ungrateful Taste, as it is said of the *Nardus* of the Antients; whence it appears to be of an aperitive Quality, and is reckoned among *Aristolochics*, Emmenagogues, and Antiscorbutics; it, also, exhilarates the Heart, and the Brain; and is effectual in all Disorders proceeding from cold, viscid, and aqueous Humours. A great Author, has talked much of its Virtues against Sorceries and Witchcraft, induced, I suppose, from its extraordinary Efficacy in spasmodic, hysteric, epileptic, and melancholic Cases. These Disorders are called *Lunatic*, and are attended with surprising Symptoms; for which Reason the Antients called them *Morbos Sacros*, Diseases of the Gods. But the Antients made but little Distinction between their Gods and Dæmons, which might lay a Foundation for this Opinion of the beforementioned Author. *Hippocrates* says very well of these *Morbi Sacri*, that there are some Diseases very surprising, and therefore called *Sacred*, or *Divine*, not because they came from the Gods, for then all would be *Sacred*, but from their surprising Effects; whence this Plant has been esteemed an Antidemoniac, though Rue, also, cures the same Diseases. There are Authors who advise the Root as an Amulet against a Quotidian Fever, and hang it about the Neck for that Purpose. *Fabius Columna*, a Man of the first Rank, and concerned in public Affairs, fell into an epileptic Disorder. Finding no Relief from Physicians, and being fatigued with the long Continuance of the Disease, he betook himself wholly to the Reading of the Antients, in order to examine, whether he could find out by Name a Plant which would cure the Epilepsy; and at length he happened upon this Plant, the second, by the Root of which he was cured. From that time he became an extraordinary Botanist, and assures us, that he knew many epileptic Patients cured by this Plant. He advises to pull up the Root before it begins to sprout, and exhibit the same in Powder to the Patient, for six Days together, in the Morning fasting, in Water, Wine, or Milk: This Medicine provokes Sweat, and frequently gives the Patient a Stool or two, which is a very good Sign. The Roots are very odoriferous, acrimonious, and penetrating; and have a balsamic, and somewhat oily Taste: Whence the *Valeriana* has the same Virtues which we observe in umbelliferous Plants. It is a proper Ingredient in pectoral, stomachic, and uterine Diseases, and is very effectual in a Stoppage of the Menses, an Ounce or two of the bruised Root being made into an Infusion after the manner of Tea, and sweetened with Honey. It is an excellent Remedy against Worms, and epileptic Fits, in Infants. *Camerarius* highly commends it against the Jaundice, and a violent Asthma, the Infusion of the Root in Water, or the Powder thereof with a Grain of Laudanum, being exhibited. This Plant is effectual, also, against all Sorts of Contusions, the Leaves being bruised in Wine, and applied to the Place affected; the same discuss scirrhous Tumors without Suppuration, and speedily cicatrize Wounds; for which Reason the Peasants in the Country apply the Leaves of this Plant to all sordid Ulcers. The Root is received into all Antidotes; but the first Species is most celebrated, and I can recommend it from an hundred Experiments which I have made of its Virtues. The eighth, ninth, tenth, and following Species, are cultivated in Gardens, being beautiful Plants, and continuing a long time in Flower. *Hist. Plant. adscript. Boerhaav.*

VALERIANA is, also, a Name for several Sorts of VALERIANELLA; which see.

VALERIANA GRÆCA. A Name for several Sorts of POLEMONIUM; which see.

VALERIANÆ RUBRÆ SIMILIS. A Name for the *Limonium; maritimum; majus.*

VALERIANA URTICÆ FOLIO. A Name for the *Eupatorium*; *Urticæ foliis*; *Canadense*; *flore albo*.

VALERIANELLA.

The Characters are;

The Root is annual and fibrous; the Leaves are conjugated; the Stalk and Branches are divided in two, and appear at Top like an Umbella. The Calyx is monophyllous, small, quinquefid, and closed. The Flower is monopetalous, of various Shapes in different Plants, and furnished with two, three, or four Stamina, growing out of the internal Sides of the Flower, which grows on the Apex of the Ovary. The Ovary grows on the Centre of the Calyx, shoots forth a Tube, and becomes a Fruit of various Forms, including a single Seed.

Boerhaave mentions six Sorts of *Valerianella*; which are,

1. Valerianella; arvensis; præcox; humilior; semine depresso. *Raii Synop.* 3. 201. *Tourn. Inst.* 132. *Boerh. Ind. A.* 75. *Lactuca agnina.* Offic. Ger. 242. Emac. 310. Park. 812. *Valeriana campestris inodora major.* C. B. P. 165. Raii Hist. 1. 392. *Locusta Herba prior.* J. B. 3. 323. *Locusta Herba, Pes Locustæ.* Chab. 437. LAMBS-LETTUCE, or CORN-SALLAD.

VALERIANELLA is cooling, and somewhat moistening, being in Temperament and Virtues not unlike Lettuce, and supplies its Room in Winter, and the Beginning of Spring, being pleasantly eaten with Vinegar, Salt, and Oil, like other Salads, among which it is reckoned one of the best. Lambs are mightily delighted and improved, and fattened, by eating this Plant; whence, they say, it takes the Name of *Lambs-lettuce. Raii Hist. Plant.*

It grows in Gardens, and among Corn, and flowers in the Spring. *Dale.*

2. Valerianella; arvensis; præcox; humilis; foliis serratis. *T.* 132. *Pseudo-valeriana, erecta, serotina, semine umbilicato, hirsuto, pyramidali.* M. H. 3. 104. *Locusta, altera, foliis serratis.* J. B. 324.

3. Valerianella; semine stellato. C. B. P. 165. *Pseudo-valeriana, annua, semine coronato, major, Lusitanica.* M. H. 3. 104.

4. Valerianella; Cretica; fructu vesicario. *T. Cor.* 6.

5. Valerianella; cornucopoïdes; rubra; vel Indica. *M. U.* 53. *Pseudo-valeriana, cornucopoïdes; annua, purpurea, semine solido.* M. H. 3. 104. *Valeriana, peregrina, purpurea.* C. B. P. 164.

6. Valerianella; Africana; foliis angustis; flore macula rubente notato. *H. A.* 2. 217. *Boerh. Ind. alt. Plant.*

The Plant is called *Valerianella*, that is, *small Valeriana*, from its Resemblance to the *Valeriana*. It grows in warm Places. The first and second Species are called *Lambs-lettuce*, because they contain a very mild Juice in all their Parts, with which Lambs are highly delighted and improved. The Name *Locusta* is given to this Plant from the Resemblance of its Branches to the Legs of a Grasshopper, when going to leap.

The first and second Species are very soft, succulent, mild, pleasant, and nourishing Herbs; whence they are good, mild, light, and nutritive Food for weak Stomachs. *Valerianella* is proper in Cases which require Lenients, Relaxants, or Lubricants; whence it is of Use in the Pleurisy and Nephritis, and, also, to procure Sleep. The crude Juice, or the Leaves, boiled in mild Flesh-broth, are very mild and wholsome Remedies in a Phthisis, where the softest and most lenient things are required. This Plant is, moreover, an extraordinary Demulcent; whence it is of Service in the Strangury, Pissing, and Spitting of Blood, Asperities of the Lungs, Cough, and Pains in the Kidneys, and is a celebrated Remedy for mitigating the Gout. It has the same Effect, whether boiled in Whey, or the expressed Juice thereof taken in good Quantity. It gives extraordinary Relief in hypochondriac Disorders. The Seed is highly aperient, and of excellent Use in the Scurvy, and all Diseases where the Root of the *Bulbocastanum* is of Service; it is, also, commended in a Gonorrhœa and Dysentery. *Hist. Plant. adscript. Boerhaav.*

VALERIANELLA ZEYLANICA. A Name for the *Hydrocotyle*; *Zeylanica*; *Asari folio.*

VALERIANELLOIDES.

The Characters are;

The Root is fibrous and perennial, and is produced from sowing the Seed, which is ash-coloured, oblong, sharp, and small, like the Seed of the Lesser Cumin. The Stalk is ramous, cineritious, covered with a slight Down, and frutescent. The Leaves are conjugated, roundish, scabrous, serrated, upon a long, sulcated Pedicle. From the Wings of the Leaves proceed other conjugated Leaves, similar, and four in Number. The Tops of the Stalk and Branches run into a very long and slender Spike, to which grow on every Side, as it were, engraved, long, monophyllous Calyces, deeply quinquefid, slender, tubulous, and very closely adhering to the Sides of the Spike. These Calyces contain a monopetalous, Funnel-shaped, quinquefid, expanded Flower, of a pale-bluish Colour. From the Inside of the Tube of this Flower proceed two Stamina. The Ovary is in the Centre of the Calyx, and consists of one long, cylindrical Seed, which has a long Tube with an hemispherical Apex. This Plant grows in *America. Boerh. Ind. alt. Plant.*

VALERIANTHEMUM. A Name for the *Rapunculus*; *Valerianoïdes*; *cæruleus*; *umbellatus.*

VALGUS. Bow-leg'd.

THE METHOD OF REMEDYING BANDY-LEGS IN CHILDREN.

Some Children have their Legs bent in an unseemly manner, either from their Birth, or if they are used by the Nurse to Standing or Walking too early: In some the *Tibiæ* are crooked, in others the Knees are distorted, in some the Feet, at the Articulation of the *Tibia* with the *Tarsus*, are turned inwards, and they are denominated *Vari*; and in some outwards, who are named *Valgi*. This Disorder requires a different Method, according to its different Degrees and Situation. 1. The most certain and mildest Method of preventing it, is to take care, that tender Children, and those who are otherwise exposed to this Disorder, especially by the Rickets, be restrained from Standing and Walking, but be allowed to lie down, sit, or be carried, either in the Arms, or some Vehicle, till the Bones, as they increase in Age, are strengthened and confirmed. But if the Disorder increase, or is born with the Child, it will be expedient, after the Application of Emollients, according to *Hildanus*, to use certain Instruments, or a kind of Boots, such as *Paré* has delineated, (see *Tab.* LVII. *Fig.* 14, 15.) made of strong Leather, Wood, or thin Plates of Iron, and adapted to the Size of the Leg. These Boots, being applied to the crooked Legs, especially to those of the *Vari* and *Valgi*, dispose them as they naturally grow, to receive by Degrees a proper Shape. The Boots must be worn Day and Night. But as several Inconveniencies may proceed from the Use of these Boots, especially if they do not fit exactly, Surgeons have thought it expedient to contrive other Instruments for this Purpose, as in *Tab.* XXXVI. *Fig.* 16. where A A represent the two Sides, made of strong Leather, or thick Pasteboard, or of thin Plates of Iron or Brass, so joined by the Piece B B, that one may answer to the interior, and the other to the exterior Side of the Legs, as in *Fig.* 17. where they are represented applied; and they may be so fastened by the Cord, or Thong, C C, as to be kept on for a considerable time Night and Day, and gradually reduce the crooked Legs to their natural Figure and Position. If the Disorder be not seated in the *Tibiæ*, but rather in the Ancles, whether the Feet be turned outwards or inwards, these Instruments of *Hildanus*, *Fig.* 16. 17. may be advantageously used; but if, by reason of the Rigidity of the Limb, it cannot easily be turned to its proper Position, let emollient Fomentations, Liniments, and Baths, be used for some Days before the Application of the Instrument. But, if the Disorder be but slight, in my Opinion, the Use of these Instruments should be neglected; which are not only very troublesome, but may, also, be hurtful by binding the Leg too hard, and hindering its Growth. And I have often observed, when the Legs have been moderately bent, and sometimes when they have been greatly incurvated, if the Children be young, and not suffered to use their Feet, but to be carried or wheeled about, that their Legs have been spontaneously restored to their proper Figure. *Hildanus* may be consulted on this Head, who has given the Figures of other Instruments suited to different Cases. *Solingen*, and *Le Clerc*, may, also, be consulted. *Heister. Chir.*

VALIGA. A Name given by some to an Infusion of Jalap, by some called *Rhabarbarum nigrum*, in Spirit of Wine, or, which is better, in Spirit of Citron; then carefully strained, and some time afterwards coloured with a little Saffron; so that it seems to be the same with the *Phalaia* of *Rolfinkius. Castel.*

VALLI, *Noel-valli, & Panni-valli.* H. M. *Siliquosa Indica Flore papilionaceo. Siliquis planis brevibus duo aut tria semina isthmia continentibus.* This is an *Indian* Shrub, which unites itself by its small Branches with the neighbouring Trees; the Leaves are like those of the Fraxinus, and have somewhat of an acrimonious Taste; the Flowers are papilionaceous, and void of Smell; the Pods are an Inch in Length, and as much in Compass, very flat, and contain two or three Seeds separated by Isthmuses, or narrow Intervals. The Beans, when parched by the Sun's Heat, are of a cineritious Colour, and an ungrateful Taste. It flowers in *August*, and the Fruit is throughly ripe in *December* and *January.*

The Beans, eaten crude, provoke to Stool with Gripings. The Leaves, made into a Catnplasm, cure an Erysipelas. The Bark supplies the Place of Hemp, in making of Ropes. *Raii Hist. Plant.*

VALLUM. The Eye-brow, and a Species of Bandage, are called by this Name.

VALRAT. A Leaf. *Rulandus.*

VALVULA. A Valve. There are many Sorts of Valves in various Parts of the Body. Thus in the Inteſtines there are the *Valvulæ Conniventes*, and the Valve of the *Colon*; ſee Coelia. In the Heart are found Valves at its Orifices. See Cor; and Anatomiſts have diſcovered Valves in the Veins, and Lymphatic Veſſels.

VANELLUS. The Lapwing. See Pluvialis.

VANILIA, BANILIA. Offic. *Vaynillus, Vayniglia.* Mont. Exot. 9. *Vanillias Piperis Arbori Jamaicenſis innaſcens.* Pluk. Almag. 301. *Volubilis ſiliquoſa Mexicana foliis Plantaginis.* Raii Hiſt. 2. 1330. *Lathyrus Mexicanus ſiliquis longiſſimis, moſchatis, nigris.* Ammon. Char. Plant. 436. *Aracus aromaticus, Tlilxochitl, ſeu Flos niger.* Hern. 38. *Lobus oblongus aromaticus.* Cat. Jam. 70. *Lobus aromaticus ſubfuſcus Terebinthi corniculis ſimilis.* C. B. P. 404. *Lobus oblongus aromaticus, odore fere Belzuini.* J. B. 1. 428. THE VANELLOES, or BANILAS.

Theſe are dark-brown flat Pods, or Sheaths, five or ſix Inches long, and ſcarce an Inch broad, wrinkled on the Outſide, full of a vaſt Number of ſmall black Grains, almoſt as fine as Sand, of a pleaſant Smell, like Balſam of *Peru*. The Plant which bears theſe Vanelloes, climbs the Trees like Bindweed; the Leaves are ſmooth and broad, in Shape like Plantain-leaves, ſet in an alternate Order; the Flowers are of a dark Colour, which are ſucceeded by the Vanelloes. They grow in *New-Spain*, and other Parts of the *Weſt-Indies*, from whence they are brought to us.

They are only uſed with us, as an Ingredient in Chocolate, to which they give a pleaſant Flavour. They are commended by *Hernandez*, in his *Deſcriptio Rerum Medicarum Novæ Hiſpaniæ, Lib. 2. Cap. 15.* to be grateful to the Stomach and Brain, to expel Wind, to provoke Urine, and the Menſes, to promote the Birth, and bring away the After-birth, to reſiſt Poiſon, and cure the Bites of venomous Creatures. *Miller's Bot. Off.*

VAPORES. Vapours. See Hysterica.

VAPORARIUM. A Vapour Bath.

VAPORATIO. A Fomentation by the Vapours or Steam of warm Liquors.

VAPPA is Wine deprived of all its ſpirituous Parts, and what is uſually called *dead*. This corrupt State of Wine is frequently, and very properly, by modern Phyſicians, compared with a particular Corruption of the Blood, when it is in a low, ſpiritleſs, and, as we ſay, a *vapid* State, as the Caſe is in healthy Perſons, when their Spirits are exhauſted by immoderate Labour, or in ſick Perſons labouring under a Quartan, and in cachectic and ſcorbutic Indiſpoſitions. *Caſtellus.*

VARENI, VARI. Names for a ſcorbutic Affection, otherwiſe called *Arthritis vaga*, the wandering Gout, conſiſting in a wandering, or ſhifting Pain, affecting the nervous Parts about the Joints, and proceeding from an acid and malignant Acrimony of the nervous Fluid, or ſerous Lymph, together with an extraordinary Mobility and Vaporoſity of the ſame, on account of the Thinneſs of its Contexture.

Vareni, with ſome, ſignifies a quite different Affection from *Vari*, being the ſame with the Ambulo; which ſee.

VARICIFORMES PARASTATÆ, in Anatomy, are continuous to the *Epididymides*, and are Veſſels ſo called, becauſe they appear full of Flexures and Contortions, like the Varices, for the better Elaboration, as it is ſuppoſed, of the Semen.

VARICOSUS, κιρσοειδὴς, is an Epithet apply'd to ſeveral Plexuſes of the Veſſels about the Pudenda, particularly of the Male. *Caſtellus.*

VARICULA, a Diminutive of *Varix*, is a Name given by *M. A. Severinus* to an Intumeſcence of the Veins in the *Tunica Aduata* of the Eye, proceeding from a Diſtention of them by black Blood. *Caſtellus.*

VARIEGATIO, Variegation, in Botany, is a Diverſifying with ſeveral Colours, as is obſerved in the Leaves and Flowers of Plants.

VARIOLÆ. The Small-pox.

Perhaps from the Time of *Hippocrates* to this very Period, there never happened any thing ſo remarkable in Phyſic, as the Appearance of this new and ſurpriſing Diſtemper; the Original of which may be traced up from the *Arabian* Authors much farther backward, than is commonly imagined; even up to the famous Epoch of *Mahomet* himſelf, in the Beginning of the Seventh Century. The Meaſles, which no doubt was of the ſame Age, (called not improperly, by *Avicenna*, *Variola Cholerica*) they look upon as a Diſeaſe ſo near akin to the Small-pox, that they generally treat of them both together, as if the greater included the leſs. This was a Diſtemper, without Diſpute, unknown to the *Greeks*, whatever ſome of the Moderns have ſaid to the contrary; and firſt obſerved and deſcribed by the *Mahometans*. And ſince it is one ſo extraordinary in its Symptoms, ſo conſtant and regular in its Stages, and ſo univerſally incident to all Mankind, it were to be wiſhed, that Mr. *Le Clerc* had thought fit to have given us a ſhort Extract, at leaſt, of what theſe original Writers have ſaid of it; eſpecially, when, in its very Infancy, we may find the Image of this Diſeaſe very well painted in their Works, and the Practice clearly enough delivered. That Tract of *Rhazes* alone, intituled, *A Diſcourſe of the Peſtilence*, would very fully explain to us the Idea they had of this Diſtemper, and ſhew us, that they were not at all acquainted with the Difference of the diſtinct and the confluent Sort. By the earlieſt Account we have of the Small-pox, we find, that it firſt appeared in *Egypt*, in the time of *Omar*, Succeſſor to *Mahomet*; though no doubt, ſince the *Greeks* knew nothing of it, the *Arabians* brought it from their own Country, and might derive it originally from ſome of the more diſtant Regions of the Eaſt: For the oldeſt of their Writers do not ſpeak of it as a Diſtemper, which had taken its Riſe very lately. And as this People in leſs than thirty Years did propagate its Religion, and Empire, ſo did it no leſs this modern Evil, not only through *Egypt*, but *Syria*, *Paleſtine*, and *Perſia*; and a little while after, along the *Aſiatic* Coaſt, through *Lycia* and *Cilicia*: And, in the very Beginning of the next Century, farther into the maritime Parts of *Africa*, and croſs the *Mediterranean*, even into *Spain* itſelf.

Here, indeed, is a new Field in Phyſic. I will only give you a ſhort Plan of this Diſeaſe, as it lies in their own Authors, and eſpecially in one of the oldeſt and beſt of them, *Rhazes*; the firſt, indeed, as he ſays himſelf, who wrote any diſtinct or exact Treatiſe upon this Subject. To begin then in his Method; as the Evil was unheard of before, ſo he aſſigned a Cauſe as entirely new in Phyſic, a ſort of an innate Contagion. This is a Ferment in the Blood, like that in Muſt, which purifies itſelf ſooner or later, by throwing off the peccant Matter at the Glands of the Skin; an Hypotheſis ſince applied, though upon very ſlight Grounds, to Fevers in general, by many Moderns. This Ferment he ſuppoſes to be derived from the Mother in the Womb, which is the Reaſon why the Diſeaſe is ſo univerſal, and ſo equally incident to all. It is moſt epidimical in Spring, and Autumn, eſpecially after a wet Summer, or a warm Winter: Children, and Adults, are moſt ſubject to it; old Age but ſeldom, unleſs in a very peſtilential Seaſon. Corpulent flabby Bodies which abound in Humours, and which have been uſed to much Wine or Milk, receive the Infection ſooneſt; they who are of this dry Habit of Body, and of a bilious Conſtitution, are more ſubject to have a more violent Sort. The *Greek* Tranſlator, who made his Verſion from the *Syriac*, (the original Language probably in which *Rhazes* wrote) calls this Sort by a Term never heard of, Εὐλογία, which, he tells us, anſwers to the *Syriac*, *Chaſpe* *. This Word, indeed, in that Tongue, as well as in the *Hebrew*, and *Arabic*, ſignifies Ἔξάνθημα, an inflammatory Puſtule; and, therefore, *N. Machelli*, who has given us a very elegant Tranſlation of the *Greek*, expreſſes it properly enough by *Incendium*; but the *Greek*, he ſays, calls it Εὐφλογία. If we go a little farther, and ſuppoſe it ſhould be read Ἐκφλογία, the Senſe of the Author would be entirely preſerved, and very little Variation made in the Reading.

The forerunning Symptoms of this Diſtemper are, an acute Fever, violent Pain in the Head and Back, (the laſt particularly a ſure Sign) Dryneſs of the Skin, Heavineſs, Difficulty of Breathing, frightful Sleeps, Redneſs of the Eyes, Pricking all over the Body, Yawning, Stretching, Pulſation, and Weight in the Head, Sickneſs, and Inclination to vomit; Great Pain in the Back, violent Sickneſs, Reſtleſsneſs, and Burning all over the Body, and an high flaming Colour, eſpecially about the Throat, Signs of an ill Sort. He calls the Puſtules, either *Sublimia*, which muſt be diſtinct, pointed, or riſing high; or *Lata*, flat and broad, as in the confluent Kind. Many of theſe Symptoms are common to the Meaſles; and, if the Heat is more intenſe, and the Straitneſs and Oppreſſion extremely great, eſpecially if there be a Cough, and Itching of the Ears and Noſe, 'tis rather a Sign of this laſt Diſtemper, which is ſometimes more dangerous than the Small-pox.

He is very particular in relating the Differences and Prognoſtics of the Small-pox. If the Eruption is eaſy, and the Maturation comes on well, and the Fever vaniſhes, no Danger; otherwiſe, if the Fever continues after the Eruption. It is a kindly Sort when the Breathing is good, the Pulſe regular, the Senſe perfect, and the Perſon can take Nouriſhment, and Sleep. When the Puſtules, containing a white Matter, are large, diſtinct, and few, and ripen without any great Fever; and even though there be many, and in ſome Places confluent, yet, if they are for the moſt part large, and advance kindly, and if, with this, the Strength keeps up, and there be no

* *Caphe*, or *Capheph*, in *Arabic*, ſignifies an Eruption of Puſtules. *Caſtelli Lexicon, ſub Voce* חסף.

Oppreſſion

Oppreſſion or Burning, this is to be reckoned one of the worſt Sort. But when they are thick and coherent, ſo that a great many of them make one by running together, when the Circle of theſe Cluſters is very large, and the Appearance of them like Fat or Suet, when they run like an Herpes, or like what they call a *Formica*, corroding, ulcerating, and contracting the Skin; when they riſe like Warts, and have no Matter in them, it is a very malignant Sort; eſpecially, if after the Eruption, they don't come on well, and the Patient be not relieved. If the Fever increaſes after the Eruption, an ill Sign: So a new Crop of Puſtules, as it ſometimes happens, ſhews a great Plenitude of Humours. The Sort is more kindly, when it is not attended with violent Redneſs; but if with great Paleneſs, dangerous. If the Eruption is made on the firſt Day of the Diſtemper, it ſhews the Humours to be too briſk and impetuous; if upon the third Day, it denotes they are more tempered and languid; if in the critical Days, by which I ſuppoſe he means the fourth and ſeventh, the Diſtemper is ſtill milder; if there be great Pain in any Part, and that Part grows greeniſh or black, and the Strength fails, it is fatal; if the Puſtules are extremely little, hard, of a violet, green, high-red, or a black Colour, and don't come to Maturation, it portends Ill: If they continue ſo throughout the whole Courſe of the Diſeaſe; if the Fever be not removed, and is attended with a Syncope, Sickneſs, or Trembling of the Heart, nothing to be expected but preſent Death. Thus far of the Symptoms, and the Judgment to be formed of the Event.

The Cure follows: And the better to judge of this, we muſt always carry it in our Memory, that *Rhazes* lived and wrote in the warm Climate of *Perſia*. He bleeds, or cups immediately, even in Children; and, if the Symptoms be violent, even to Faintneſs; otherwiſe, a leſs Quantity is ſufficient. If a Vein in the Arm be not eaſily found, the *Poplitæa* may be open'd: The Room to be kept cool; all the Regimen to be, alſo, cool; Ptiſan the Nouriſhment, and the Medicines principally Troches of Spodium, (a good Abſorbent) and the Juice of Pomegranate, and all other acid and aſtringent Plants. And the Rule, in uſing this refrigerating Method, muſt be with regard to the intenſe Burning of the Diſeaſe, and managed with that Moderation, as not to extinguiſh the natural Heat. At firſt he gives Ice-water, till the Patient vomits and ſweats; then vaporates with warm Water; and this he reckons the moſt effectual way to drive out the Puſtules: So for Prevention and Preparation, he adviſes Bleeding, Swimming, uſing Ice-water, and all the coldeſt acid Diet, as the Juice of unripe Grapes, Salading, *&c.* He gives a Receipt made of Acids and Spodium, much in Vogue among the *Indians*, who, it ſeems, affirmed, that whoever uſed it would not have ten Puſtules in the Whole. The Body, if bound, to be kept open, by ſome Infuſions taken twice a Day; this will make the Puſtules fewer; and to be done, if the Diſtemper be violent. After the Eruption, ſtrong Purging to be avoided, eſpecially towards the Criſis, for fear of a Dyſentery; and too great a Flux is to be reſtrained. If Bleeding has been omitted in the Beginning, then gentle Sweating, and promoting the Eruption. If the Patient be hot, and the Puſtules do not advance, the Decoction with Figs, Raiſins, Lentils, *&c.* to be conſtantly uſed. If the Diſeaſe be ſlight, and the Oppreſſion little, and the Small-pox be out, Coolers not to be given to any great Degree, for fear of retarding the Eruption; but the Decoction to be continued, with ſome Saffron, *&c.* When they are all come out, Vaporations with Water. For Dilution, Water of Barley, Pomegranates, Melons, *&c.* and other temperate Liquors; and any thing, which more reſolves the Humours, is leſs neceſſary, eſpecially in the Meaſles. If the Oppreſſion be very great, and near to a Syncope, dipping in cold Water, and Friction, to drive out the Meaſles; and to take care there be not too great a Solution of the Fluids, or too profuſe a Sweat. After the fifth Day, (reckoning from the firſt Seizure) if the Puſtules don't advance, uſe thoſe Medicines which promote the Eruption. But this is to be done with Circumſpection, and with regard to the Symptoms; eſpecially the Fever, which will be beſt judged of by the Breathing, and the Pulſe. But, if the Puſtules are hard and rough, like the Warts, and the Patient languid, it is to no Purpoſe to attempt any Maturation; for that cannot be done; ſuch a State of the Diſeaſe being plainly pernicious. Opiates, above all things, are proper in Want of Sleep, or in caſe of a Looſeneſs. The Body is open generally towards the End of this Diſeaſe, eſpecially in the worſt Kind. No Purging before the Criſis; but, if need be, and the Body be dry, purge at the Beginning, and before the Declenſion; the firſt to abate the Heat and Beating of the Head; the latter to eaſe Nature of her Burden, and to carry off the morbific Matter. This to be judged of either before or after Bleeding, by the Body's being weakly, yet bloated, and full of Humours; a lurking Feveriſhneſs, and undulating Pulſe. In this Caſe, Purging anſwers beſt; but if the Mouth be bitter, if Vomiting, and great Inflammation, if the Throat is ſo ſtuffed, as to endanger Strangling, it is proper to bleed. The Directions are very full, which relate to Gargles, Collyriums, *&c.* and the preventing any Ulcers, or Pitting, from the Small-pox.

This is the Deſcription *Rhazes* gives of the Small-pox; a very true one, though it does not minutely deſcend into Particulars; and, for above 500 Years, it was thought ſo complete, that ſucceeding Writers ſcarce added any thing to it: Till at laſt, indeed, they came to diſtinguiſh the ſeveral Stages of this Diſtemper, and obſerve the very Days in each of them with great Exactneſs. However, even ſince that Time to our own, though the modern Authors have enter'd into a more preciſe Detail of the Appearances, and the Symptoms, which attend the Diſeaſe; yet, as far as regards the practical Part, we ſee here the Foundation of every thing they have advanced. To inſtance in a few Particulars:

The *Arabians* have rightly diſtinguiſhed between the two Sorts of Small-pox, and between each of them, and the Meaſles; and have deſcribed not only the *regular Sorts*, but have taken Notice of the anomalous too. They have, alſo, obſerved, where one Crop has ſucceeded another.

At the Beginning, and ſometimes even after the Eruption, they preſcribe Evacuations, both by Bleeding and Purging. And, indeed, they thought, that the good or ill Event of the Diſtemper, depended ſo much upon the Treatment they uſed at the firſt Seizure, or in the firſt Days of it at leaſt, that they are extraordinarily careful and exact in the Regimen, which they order to be extremely cool, as was moſt proper and ſuitable in ſo ſultry a Climate as theirs was. Their Practice ſurely was founded upon good Grounds; though others have followed it in an extravagant manner, and even exceeded what they did in Nations, where neither the Nature of the Diſeaſe, nor the Conſtitution of the Air, required it. Even our Countryman *Sydenham* carried this Notion to an Extremity in the firſt Edition of his Works; though afterwards he was ſo wiſe as to retract a great deal of what he had ſaid; and came into the moderate Method, as, without Diſpute, more agreeable to Reaſon, and to the Temper of our own Iſland.

We may obſerve, that their whole Management, both as to Diet and Medicine, in this Stage, ran upon Dilution; which they thought the moſt effectual Means to produce a kindly Eruption, and to keep the Puſtules out. And as to this laſt Point, however cooling their Regimen in general was, they made no Scruple to uſe warm and generous Cordials, when Nature ſeemed to want Aſſiſtance, or when they apprehended any Danger of their ſtriking in. To the ſame End, when there was any great Diſorder and Ferment in the Humours, which ought to be allay'd, or any terrible Symptom, which hindered the Maturation of the Pock, they had recourſe to that ſovereign and divine Remedy, Opium; a Remedy often uſed by them in this Caſe; though *Sydenham* ſeems to have been the firſt, who ever gave the leaſt Hint of ſuch a Practice among ourſelves.

Here, too, you will find, that in the Declenſion of the Diſeaſe, when Nature has diſcharged all ſhe can, and is ready to ſink under the Load of the morbific Matter, they took the proper ways to relieve her by Art; and for that Purpoſe direct us, how to apply both Bleeding and Purging, in ſuch a Caſe of Extremity. *Freind's Hiſt. of Phyſic.*

History of the Disease.

When the Small-pox proves epidemic, and is mild and regular, it uſually begins about the vernal Equinox; but, when it is not only epidemic, but irregular and dangerous, it appears about *January*. The Small-pox is of two Kinds, the *diſtinct*, and the *confluent*; which though they differ not eſſentially, are eaſily diſtinguiſhed by ſome conſiderable Symptoms peculiar to each Kind.

The diſtinct Kind begins, (1.) with a Chilneſs and Shivering, immediately followed by (2.) extreme Heat, (3.) violent Pain in the Head and Back, (4.) Vomiting, (5.) and in Adults, a great Tendency to Sweat; (6.) Pain in the Parts immediately below the *Scrobiculum Cordis*, if they be preſſed with the Hand; (7.) Sleepineſs and *Stupor*, eſpecially in Children, and ſometimes Convulſions, which happening after Dention, I always ſuſpect the Small-pox to be approaching; and the Eruptions, appearing in a few Hours after, generally confirm the Prognoſtic; and I have frequently obſerved, that the Small-pox immediately ſucceeding ſuch Fits thrown out large Eruptions, is of a mild and favourable Kind, and ſeldom proves confluent. It may be proper to obſerve here, that in ſuch whoſe Blood is of a looſer Texture, and eaſily admits of a Change, it ſometimes happens, that the Courſe of Separation is performed by degrees, without any conſiderable Sickneſs previous to the Expulſion of the Matter, and Eruption of the Puſtules.

The *diſtinct* Small-pox come out moſtly on the fourth Day inclusive, from the Beginning of the Illneſs, and ſometimes a

little later, but very rarely ſooner; at which time the Symptoms are uſually much abated, or even entirely vaniſh, ſo that the Patient ſeems tolerably well; only Adults can ſcarcely be prevented from ſweating, however thinly they are covered; and this Diſpoſition continues till the Eruptions begin to ripen, and then diſappear ſpontaneouſly. The Eruption proceeds nearly in the following manner: Firſt, a kind of pale-red Puſtules, as large as the Head of a ſmall Pin, appear diſperſed, firſt on the Head, Neck, and Breaſts, and afterwards on the whole Body. During this Stage of the Diſeaſe, the Throat is affected with a Soreneſs, that increaſes proportionably as the Puſtules riſe, which, growing every Day larger, and ſharper at the Top, diffuſe a Redneſs and Inflammation over the Skin and Fleſh of the Parts adjacent.

This happens about the eighth Day from the Beginning of the Diſeaſe, which time I always particularly obſerve; for then the Spaces between the Puſtules, that appeared before of a pale White, begin to grow red, and ſwell in proportion to the Number of Puſtules; and are affected with a Pain, and, as it were, a Laceration of the Parts, which continually increaſing, promotes the Inflammation and Swelling; ſo that, in the Progreſs of the Diſeaſe, the Eye-lids are ſo diſtended, as ſometimes to render the Patient blind; and they ſhine, and nearly reſemble an inflated Bladder. Sometimes the Blindneſs is induced ſooner, a great Number of Puſtules fixing on the Eyes from the Beginning of the Eruption; next, the Face, the Hands, and Fingers ſwell in proportion to the Quantity of the Puſtules. The Puſtules on the Face, that till this Day were ſmooth and red, now grow rough and whitiſh, which is the firſt Sign of a beginning Suppuration; and they, alſo, gradually diſcharge a yellow Matter, in Colour reſembling an Honey-comb. The Inflammation of the Hands and Face, being arrived at its Height, produces in the Spaces between the Eruptions, a florid Colour, like that of Damaſk-roſes; and the more mild and genuine the Diſorder is, the more the Eruptions, and their intermediate Spaces approach this Colour. As the Puſtules in the Face appear rougher and yellower every Day as they ripen, thoſe of the Hands, and other Parts, appear ſmoother and whiter.

On the eleventh Day, the Swelling and Inflammation manifeſtly abate, and the Eruptions both of the Face, and the reſt of the Body, being come to their Maturity, and juſt Bigneſs, equal to that of a large Pea, dry and ſcale off; and, in this kind of Small-pox, they commonly diſappear on the fourteenth and fifteenth Day. But the Eruptions of the Hands generally prove more obſtinate than thoſe of the other Parts; and, being yet freſh and white, remain a Day or two after the reſt. Thoſe of the Face and Body ſcale off, but theſe of the Hands burſt, and ſo vaniſh. The Puſtules of the Skin are ſucceeded by a Scurf, or branny Scales, and theſe ſometimes by Pits, or Pock-marks; for when the Puſtules firſt fall off, no Unevenneſs is perceived in the Skin; but theſe Scales often coming on, and falling off alternately, at length thoſe Pits are produced, which frequently appear long after the Recovery of the Patient; tho' the diſtinct Small-pox very rarely leaves any Marks behind it. The Patient is either quite coſtive, or has few Stools, during the whole Courſe of the Diſtemper.

That Species of the Small pox, which we call the *confluent*, is attended with the ſame Symptoms in common as the *diſtinct*, only they prove more violent; and by that Sign the *confluent* Kind may be diſtinguiſhed from the *diſtinct*, even before the Eruption. Nevertheleſs, the Patient is not ſo ready to ſweat in the confluent Kind as in the other; and a Looſeneſs ſometimes precedes, and continues a Day or two after the Eruption; a Symptom which I have not hitherto met with in the diſtinct Small-pox.

The confluent Small-pox generally comes out on the third Day, ſometimes earlier, but ſcarcely ever later; whereas the diſtinct appears on the fourth Day, or later; but very rarely before; and the ſooner the Puſtules come out before the fourth Day, the more they run together. However, though this be true in general, and the confluent Kind ſcarcely ever appears ſo late as the fourth Day; yet, ſometimes, the Eruption is deferr'd, by ſome violent Symptom, to the fourth or fifth Day. Thus, 1. Sometimes, by a ſharp Pain in the Loins, reſembling a Fit of the Stone. 2. Sometimes in the Side, like a Pleuriſy. 3. Sometimes in the Limbs, as in a Rheumatiſm. Or, laſtly, 4. In the Stomach, attended with great Sickneſs and Vomiting. In theſe Caſes, which, however, are not common, I have obſerved the Small Pox to come out later than ordinary, as being retarded by the conſiderable Violence of the Symptoms, which, being more ſevere than uſual, when they ariſe in the very Beginning, manifeſtly indicate the ſubſequent Small Pox to be of the *confluent* Kind, and not void of Danger.

Though the firſt Symptoms of the *diſtinct* Kind vaniſh immediately after the Eruption, yet, in the *confluent* Kind, they afflict the Patient ſeveral Days after the Puſtules appear.

Sometimes this ſort comes out like an *Eryſipelas*, and ſometimes like the Meaſles, from which they are difficult to be diſtinguiſhed, without carefully attending to the differenr Times of the Eruption in theſe Diſeaſes, and other Circumſtances, in which they differ extremely. As the Diſtemper increaſes, the Puſtules, eſpecially of the Face, do not riſe plump, as in the *diſtinct* Kind, but run together; and appear, at firſt, like a red Bladder, covering the whole Face, and making it ſwell ſooner than in the *diſtinct* ſort, till, at laſt, they appear like a thin white Pellicle, cloſely adhering to the Face, and riſing little higher than the Surface of the Skin.

After the eighth Day, this Pellicle grows every Day gradually rougher, as appears by the Touch, and inclines to a brown, and not to a yellow Colour, as in the *diſtinct* Kind: The Roughneſs and Colour of the Skin daily increaſe, till, at length, the Pellicle falls off in large Scales; but, when the Diſeaſe has been very ſevere, it uſually ſticks to ſome Part of the Face, till after the twentieth Day. The more violent the Diſtemper proves, the nearer the Eruptions, as they ripen, incline to a *dark-brown Colour*; and the longer they are in falling off, if left to themſelves; but the leſs they run together, the yellower they are, and the ſooner they ſcale off. When this Pellicle, or Scab, which covers the Face, firſt falls off, it leaves no Roughneſs behind; but it is immediately ſucceeded with branny Scales, of a very corroſive Nature, which not only make larger Pits than the *diſtinct* Kind generally do, but, alſo, much diſfigure the Face with unſeemly Scars: And, in the *confluent* Kind, if the Diſeaſe has been very violent, the Skin of the Shoulders and Back ſometimes ſcales off, leaving theſe Parts bare.

It muſt be obſerv'd, that this Diſeaſe is not to be eſteem'd dangerous from the Number of Eruptions ſcatter'd over the Body, but only from that in the Face; for if they be very thick in the Face, though there are but few, and thoſe of the *diſtinct* Kind, every-where elſe, the Patient is equally endangered, as if all the Limbs were extremely full. But, on the contrary, though every Part beſides be full, if there be but few in the Face, the Danger is leſs. In this manner, therefore, muſt we judge of the Kind.

In the *confluent* Small Pox I have always obſerv'd, the Eruptions in the Hands and Feet were larger than thoſe of the other Parts, and were gradually leſs and leſs, the nearer they approached the Body.

The *confluent* Small Pox is attended with two other conſiderable Symptoms: 1. A Salivation, or Spitting, in Adults. And, 2. A Looſeneſs, in Children. The former is ſo conſtant an Attendant on this Diſeaſe, in Adults, that I never met with but one Patient who was free from it; but the Looſeneſs does not ſo certainly affect Children. The Evacuation made by theſe Symptoms is as neceſſary as either the Eruptions, or the Swelling of the Face and Hands.

The Salivation ſometimes begins as ſoon as the Eruptions appear, and ſometimes not till a Day or two after: The Matter is for ſome time thin, eaſily and plentifully expectorated; and this Salivation reſembles that raiſed by Mercury, only the *Saliva* is not ſo fetid: But, towards the eleventh Day, the *Saliva* now becomes more viſcous, is raiſed with great Difficulty; the Patient is thirſty, coughs often whilſt he drinks; and the Liquor flies out at the Noſtrils; from this Day the Salivation generally ſtops; though ſometimes but rarely, after it has ceaſed for a Day or two, it returns: At the ſame time, the Swelling of the Face begins to abate, but then the Hands commonly ſwell, or, at leaſt, ought to do ſo.

The Looſeneſs, in Children, appears not ſo ſoon as the Salivation in Adults; but, whenever it begins, unleſs it be ſtopt by Art, it attends the Diſtemper throughout.

In both Kinds of the Small Pox the Fever rages moſt from the Beginning to the time of the Eruption, after which, it abates, and continues much more moderate, till the Suppuration begins, which being finiſhed, it ceaſes entirely.

I have always obſerved, when the Diſeaſe proved very violent, that the Patient had a Kind of Paroxyſm towards Evening, at which time the more dangerous Symptoms aroſe, and raged moſt ſeverely.

Irregular Symptoms, ariſing from unskilful Treatment.

The irregular Symptoms which happen on the eighth Day, in the *diſtinct* Kind, and on the eleventh, in the *confluent*, always calculating from the firſt Beginning of the Diſtemper, moſt eminently concern the Life or Death of the Patient, it being apparent, that moſt of thoſe who periſh by either Species, die on one of the above-mentioned Days.

In the *diſtinct* Kind, as the Patient, if an Adult, uſually ſweats freely, he conceives Hope of Recovery, thinking the Malignity of the Diſeaſe will thus be expelled through the Pores of the Skin; and therefore diligently promotes the Sweat, by a hot

hot Regimen. But thoſe Particles being, at length, expelled by Sweat, which ſhould have ſerved to raiſe the Puſtules, and ſwell the Face, on the eighth Day; the Face, inſtead of being ſwelled, appears flaccid; and the intermediate Spaces, inſtead of being inflamed, appear white, or pale, whilſt the Puſtules look red, and continue elevated, even after the Death of the Patient. The Sweat, which had flowed freely to this Day, now ceaſes ſuddenly and ſpontaneouſly, and can't be raiſed again by the warmeſt Cordials. In the mean time, the Patient is ſeized with a Delirium, great Reſtleſſneſs and Sickneſs, a Frequency of making Urine in ſmall Quantities, and expires in a few Hours. But it muſt here be obſerved, that, if the Eruptions be few, the Diſeaſe happens in the Winter, and in a Perſon in Years, or if Bleeding has been previouſly uſed, this hot Regimen does not then ſo certainly hinder the Swelling of the Face, and, conſequently, haſten Death, as where the Eruptions are many, the Patients in the Prime of Life, and no Blood has been taken away.

But, in the *confluent* Kind, the Danger is greateſt, and the greateſt Number die on the eleventh Day: For as the Salivation, which had hitherto preſerved the Patient, commonly ceaſes ſpontaneouſly about this time, unleſs the Swelling of the Face continues longer, and that of the Hands, now manifeſtly beginning, ſupplies its Place, Death muſt certainly enſue. For it muſt be conſidered, that, in this Kind of Small Pox, where the Eruptions are ſo ſmall, not only the Salivation, but, alſo, the Swelling of the Face and Hands, is abſolutely required, in order to a proper Diſcharge of the morbific Matter; and if either be wanting, or diſappear too ſoon, the Patient muſt periſh immediately. But it happens too frequently, in this hot Diſtemper, that the Texture of the Blood is ſo much weaken'd, and broke, and ſo highly inflamed, by an over-hot Regimen, as to be no longer able to perform the Expulſion of the inflammatory Particles in a flow and gradual manner (not to mention now the Miſchiefs proceeding from forcing Sweat improperly); whence either the Face and Hands do not ſwell at all, or the Swelling vaniſhes with the Salivation. For though the Swelling of the Face ought to abate a little on this Day, yet it ſhould not go off entirely, till a Day or two after; the Swelling of the Hands, in the mean while, continuing, and increaſing, which is one of the moſt certain Signs of Recovery, as the contrary is of imminent Danger.

The *Saliva*, on this Day, becomes ſo viſcid, and tough, as to endanger Suffocation; and, when the Patient drinks, the Liquor falls down the Windpipe; whence it is thrown up through the Noſtrils with a violent Cough: He is ſeized with a Hoarſeneſs, a great Stupor, and Drowſineſs; and, being wholly oppreſſed by the Violence of the Diſeaſe, generally ſinks under the Difficulties on this Day.

There are, alſo, other Symptoms, which happen in any Stage of the Diſtemper, and which are equally common in the *diſtinct* and *confluent* Kinds of the Small Pox. Thus a *Delirium* ſometimes ſeizes the Patient, occaſioned by the exceſſive Ebullition of the Blood; and the Heat is ſo intolerable, that he endeavours furiouſly to get looſe from thoſe who confine him in Bed. Sometimes the ſame Cauſe produces a Kind of *Coma*, ſo that the Patient almoſt continually dozes, unleſs he be conſtantly rouſed.

Sometimes, alſo, in this Diſeaſe, as in the Plague, the Texture of the Blood, being diſſolv'd by the Violence of the Inflammation, purple Spots appear in the Spaces between the Eruptions, which are generally Forerunners of Death: This Circumſtance happens oftener, when the Conſtitution of the Air chiefly favours this epidemic Diſeaſe. Sometimes black Spots, ſcarce ſo large as ſmall Pins Heads, and depreſſed in the Middle, appear on the Tops of the Eruptions, in different Places; which, as they proceed from too much Heat, at length, by the Uſe of a cooler Regimen, acquire a brown, and afterwards a yellow Colour, which naturally belongs to the genuine and regular Small Pox; and the nearer the Eruptions, when come to Suppuration, reſemble this Colour, all the Symptoms become proportionably milder, and *vice verſa*.

The Blood of young, and of vigorous Perſons, is ſometimes ſo much inflamed, in this Diſeaſe, eſpecially if too liberal an Uſe of Wine, or any ſpirituous Liquor, has preceded, as to break through the Arteries into the Bladder, and ſo occaſion bloody Urine; which is one of the moſt dangerous Symptoms of this Diſtemper.

Sometimes, but not ſo frequently, a Flux of Blood from the Lungs proceeds from the ſame Cauſe: But either of theſe Hæmorrhages uſually happen in the Beginning, before the Eruptions appear, which would prove particularly *confluent*.

Sometimes, alſo, eſpecially in young Perſons, there happens a total Suppreſſion of Urine, either at the Height or Declenſion of the *diſtinct* Kind.

Other Symptoms ariſe, when the Patient has been injured, 1. By too intenſe Cold. 2. Improper Bleeding in a very large Quantity. Or, 3. Over-purging. Whence the Eruptions ſometimes ſuddenly ſink, and a Looſeneſs comes on, which, in Adults, proves highly dangerous, the variolous Matter being thereby ſtruck in, ſo that Nature is utterly unable to expel it: By theſe means, alſo, the Swelling of the Face and Hands is check'd.

But the Symptoms, which proceed from taking Cold, ſeldom appear, if compared with thoſe that ariſe from the hot Regimen: For as this Diſeaſe may deſervedly be reckon'd among thoſe of the moſt inflammatory Kind, a Miſtake, on this hand, happens much more frequently than on the other.

The Eſſence of this Diſeaſe ſeems to be an Inflammation of the Blood and Juices, (yet of a different Kind from other Inflammations) in removing which, Nature, during the firſt two or three Days, endeavours to correct and digeſt the inflamed Particles, which, being afterwards thrown out on the Surface of the Body, ſhe further ripens, and, at length, totally expels them, in the Form of ſmall Abſceſſes. Hence, in order to lay a Foundation for the *Method of Cure*, it muſt be remarked, that this Diſeaſe has two Stages; the firſt is that of the Separation, the ſecond that of the Expulſion.

1. The Separation is moſtly accompanied with a febrile Ebullition, and is ordinarily finiſhed in three or four Days, during which time, Nature is employed in collecting the inflamed Particles that diſturb the Blood, and, expelling them to the fleſhy Parts; which being over, the former Calm returns. 2. The Expulſion next ſucceeds, which is performed during the Remainder of the Diſeaſe, by means of thoſe ſmall Abſceſſes in the Fleſh, which, like other Abſceſſes, undergo the States of Crudity, Suppuration, and Exſiccation; and if theſe States are finiſhed in a ſuitable manner, the Danger is paſt; but, if otherwiſe, all is diſordered. The Expulſion requires a much longer time than the Separation, this being performed in a thin fluid Body, but that in a denſe Subſtance, at a greater Diſtance from the Fountain of Life.

Hence the Indications are, 1. That ſuch an equable Ebullition of the Blood be maintain'd, that it may neither finiſh the Separation too haſtily, by riſing too high; nor retard, or render it incomplete, by ſinking too low. 2. That the Abſceſſes or Eruptions be carefully kept up, ſo that, running through their proper States, they may, at length, entirely diſcharge the Matter they contain, and vaniſh.

With regard to the firſt Indication, great Caution is requir'd, eſpecially during the Separation, that the Ebullition may not riſe too high, either from heaping too many Cloaths on the Patient, over-heating the Air, by keeping too large a Fire in the Room, or uſing heating Medicines and Cardiacs, eſpecially if the Patient be in the Prime of Life, or if his Blood be too much enriched by ſpirituous Liquors, or if it be the Spring Seaſon, or, at leaſt, only the Beginning of Summer; otherwiſe, the Separation, which ſhould be carried on ſlowly, and gradually, for the better promoting an univerſal Deſpumation, will hence be hurried on too faſt, and thus either there will not be a ſufficient Number of Particles collected, or, perhaps, ſome Particles may be brought to Secretion, which Nature would not, otherwiſe, have ſecreted, were ſhe not forced beyond her juſt Limits, and made to injure herſelf: For when ſuch Particles are ſeparated, as are unfit for Separation, the Motion of others, that have a Tendency to it, is hindered, by their mixing with theſe; and thus they are rendered leſs fit for Expulſion.

It ſeems agreeable to Reaſon, that the more time Nature employs in perfecting the Separation, provided the Ebullition does not entirely ſubſide, ſo much the more certainly and univerſally it is completed; upon which the Succeſs of the ſubſequent Cure muſt needs principally depend, as a different Event muſt manifeſtly enſue from the contrary Method. For as over-early Fruit does not come to Perfection, ſo no Good ariſes from the hot Regimen, but it frequently produces an immediate Delirium, or profuſe Sweats ariſe, whereby ſuch Particles are ſeparated as are unfit for Secretion, and not agreeable to the Nature of *Pus*; or elſe the Eruptions, being driven out too much by Cardiacs, and a hot Regimen, become of a terrible and fatal *confluent* Kind.

From the other Method I have never obſerved any Miſchief; for Nature, left to herſelf, finiſhes her Work in a proper time and manner, ſo as to need no Aſſiſtance, at leaſt in the Young and Robuſt.

But the Danger of raiſing the Ebullition, by a hot Regimen, is not greater than the Danger of depreſſing it by Bleeding, Emetics, Cathartics, Cyſters, and the like Evacuations: For, by them, not only the Ebullition is too much diminiſhed, by means of which the Parts, intended for Deſpumation, ſhould have been carefully ſeparated; but the Matter, alſo, is waſted, which ſhould continually ſerve as Fuel to the Secretion once begun: Whence it frequently happens, that the Eruptions, which came out kindly in the Beginning, and, perhaps, ſo much the better from the previous Uſe of the above-mentioned Evacuations,

cuations, ſink ſoon after, as if they were ſuddenly ſtruck in; occaſioned, principally, by a want of a freſh Supply of Matter to ſucceed the former, and finiſh the Separation. We ſhall, afterwards, ſhew, that Bleeding and Vomiting are neceſſary, in the *confluent* Kind.

To proceed to the ſecond Indication: As it has been ſhewn, that it is highly dangerous to keep the Patient over-warm, during the time of Separation, whilſt the Fever is preſent, and the Eruptions ſcarcely appear; ſo an Error of this Kind is equally dangerous, at any time of the Diſeaſe, and eſpecially towards the Beginning of the Expulſion, whilſt the Eruptions are yet in a State of Crudity. For though the tumultuary Motion of the Blood be conſiderably abated, upon the Separation and Tranſlation of the Matter to the fleſhy Parts; yet, being ſtill weak, and having ſcarcely acquired a new State and Texture, it is eaſily affected by the immoderate Heat ariſing from all Parts; and, upon the leaſt Occaſion given, becomes inflamed with a Tendency to a new Ebullition, which does not promote Separation, that Buſineſs being already finiſhed, but *produces* dangerous Symptoms, *diſturbs* the Eruption begun, and proves detrimental, by putting the Contents of the Puſtules into violent Motion. By theſe means, either the Particles, already ſecreted, and depoſited in the Habit, being hurried away by the violent and rapid Motion of the Blood, are abſorbed by it; or the fleſhy Parts, being heated beyond the Degree requiſite for Suppuration, do not finiſh it ſo completely: Or, laſtly, perhaps, upon the coming of this new Diſorder, the Texture of the Blood, and the Tone of the fleſhy Parts, ſuffer ſo great an Alteration, that they cannot overcome the Matter expelled, and digeſt it in the uſual Way of Abſceſſes.

But we muſt not be ſo intent upon preventing an immoderate Ebullition of the Blood, as to check the Eruption of the Puſtules, by expoſing the Patient to the Injuries of the Cold: The fitteſt Degree of Heat, to promote their Expulſion, is the natural one, as this is ſuitable to the Temper of the fleſhy Parts; and to exceed, or fall ſhort of it, is dangerous, on either hand.

From what has been deliver'd, it ſeems manifeſt, that this Diſeaſe is a very dangerous one, and the Method of Cure difficult to be aſcertained.

If the Eruptions recede, or the Swelling of the Face and Hands fall, either from unſeaſonable Bleeding, or taking Cold, recourſe muſt be had to Cardiacs; but we muſt be careful of giving them too freely, leſt a new Ebullition ſhould be ſuddenly raiſed; the Blood being, yet, weak, and eaſily affected by a hot Stimulus.

As ſoon as the Signs of the Diſeaſe appear, I confine the Patient within Doors, forbid the Uſe of Wine and Fleſh-meats, and allow Small Beer, moderately warm, with a Toaſt, for common Drink; and ſometimes ſuffer it to be drank at Pleaſure: I, alſo, direct Water-gruel, Barley-broth, roaſted Apples, and other Kinds of Aliment, that are neither remarkably heating, nor cooling, nor hard to digeſt; nor do I much diſapprove of Milk, with roaſt Apples bruiſed in it, provided it be given warm, and ſparingly. I immediately caution againſt a hotter Regimen, and the Uſe of all Cardiacs.

Bloody Urine, purple Spots, and other mortal Symptoms above ſpecified, happen only from a too early Confinement in Bed, eſpecially in young Perſons: I do not, therefore, direct the Patient to be put to Bed till the fourth Day; at which time, if the Eruption does not come kindly forward, it is proper to give ſome gentle Cardiac, at leaſt for once, to drive out the Puſtules. Among the Medicines that produce this Effect, thoſe called Paregorics, or Opiates, ſuch as Liquid Laudanum, Diaſcordium, and the like, given in a ſmall Quantity, mixed with ſome proper Cordial Water, are the moſt efficacious: For as they abate the Ebullition of the Blood, Nature expels the morbific Matter with greater Eaſe and Convenience. But I would not adviſe the giving a Cardiac before this Juncture, even though there be a Looſeneſs, that ſhould require ſuch a Remedy; for the Looſeneſs goes off ſpontaneouſly, as does a Vomiting, when Nature expels the variolous Matter by the Skin.

But if I am called to a ſtrong young Man, who, beſides, has been addicted to a free Uſe of Wine, or any other ſpirituous Liquor, I think, for him to keep from Bed, and refrain from Cordials, not ſufficient to check the Ebullition of the Blood, unleſs Bleeding in the Arm be, alſo, uſed: For the Motion of the Blood, being rendered ſo violent by its Inflammation, it frequently burſts through the Veſſels into the Bladder, or occaſions purple Spots, and other malignant Symptoms, which deſtroy the Patient.

As ſoon as the Puſtules appear, I examine carefully, whether they are of the *diſtinct* or *confluent* Kind, as they differ extremely from each other: If, therefore, upon conſidering the Symptoms above-enumerated, they appear of the *diſtinct* Kind, I take care, that the Patient be refreſhed with Small Beer, Water-gruel, Barley-water, or the like, in the manner above directed; and, if it be Summer, the Weather exceeding hot, and the Puſtules few, I ſee no Reaſon why the Patient ſhould be confined in Bed, but, rather, that he may riſe, and ſit up a few Hours every Day, provided the Injuries, ariſing from the Extremes of Heat or Cold, be prevented, both with reſpect to the Place where he lies, and the manner of Clothing: For when the Patient ſits up between-whiles, the Diſtemper finiſhes its Courſe with greater Eaſe, and, alſo, more expeditiouſly, than if he had been conſtantly kept in Bed; which not only prolongs the Illneſs, but, likewiſe, promotes the febrile Heat, and occaſions a painful Inflammation, upon the Riſing of the Puſtules: But if the Coldneſs of the Seaſon, or a numerous Eruption, makes it neceſſary for the Patient to keep his Bed conſtantly, I take care to prevent his lying warmer, or with more Cloaths on him, than he uſed to do whilſt in Health; and that only a moderate Fire be made in the Room, Morning and Night, unleſs it be the Winter Seaſon. Neither do I require, that he ſhould lie always in the ſame Place in Bed, leſt a Sweat ſhould be raiſed, which can't be promoted without very great Danger.

In the Declenſion of the Illneſs, when the free Exhalation of the *Effluvia*, proceeding from the Matter, now chang'd into *Pus*, is prevented by the Hardneſs and Dryneſs of the Puſtules, it will be proper to give five or ſix Spoonfuls of *Canary*, or ſome other mild Cardiac; leſt theſe putrid *Effluvia* return again into the Blood. At this time, alſo, and not before, Cardiacs, and a warmer, and more cordial Diet, may be allow'd; as Sugar-ſops, Oatmeal-caudle, and the like. Nor will any thing further be needful, in the kindly *diſtinct* Species, provided the Patient will conform to this temperate Method and Diet; unleſs, perhaps, Reſtleſſneſs, Watchings, or other Symptoms, threatening a Delirium, ſhould occaſionally require an Opiate.

This is the true and genuine Method of treating this Kind of Small Pox; but if, through the Prejudices or Obſtinacy of the Friends, or Diffidence of the Patient, this Regimen be oppoſed, I eſteem it ſafeſt to bleed; which though it is, in its own Nature, prejudicial in this Kind of Small Pox, as it diſturbs the Separation, and leſſens the Supplies intended to keep up the Eruptions and Swelling, yet it makes ſome little Amends for the Injuries of the ſubſequent hot Regimen; and therefore renders this Method, which I would not uſe without Compulſion, leſs dangerous.

Greater is the Danger in the *confluent* Small Pox, which proceeds from a greater Inflammation of the Blood, and therefore more Caution is required, not to heat the Patient. But though this Kind naturally demands greater Cooling than the other, yet, in order to promote the Swelling of the Face and Hands, (without which Death muſt enſue) and the Elevation and Increaſe of the Eruptions; and, alſo, becauſe the Patient, on account of the painful Ulcerations, cannot ſit up, it is proper he ſhould keep his Body, and even his Hands, in Bed, provided he be lightly covered, and allowed to turn himſelf therein, as he pleaſes: And, in the Declenſion of the Diſtemper, upon the Approach of the ſuppurative Fever, he muſt not only be allow'd this Liberty, but admoniſhed to make uſe of it; and muſt be turned often, Night and Day, to moderate the exceſſive Heat, and prevent Sweat, by which the Humour is diſcharged, wherewith the Small Pox ſhould be diluted, to render them mild.

As the Salivation, which conſtantly attends this Kind of Small Pox, is one of Nature's principal Evacuations, and is here ſubſtituted inſtead of that which ſhould have been made by Puſtules, (for the Evacuation by Puſtules does not proceed ſo well in this low and flat Sort, as in the other) we muſt diligently endeavour to keep it at its Height, and prevent its untimely Stoppage, either from the Uſe of heating Medicines, or by forbidding the free Uſe of Small Beer, or ſome ſuch Liquor. Now as the Spitting, in its natural Order, is to begin as ſoon as the Eruptions appear, and abate on the eleventh Day, but not entirely vaniſh till a Day or two after, ſo, if it ceaſes before that Day, the Danger is great: For as the Swelling of the Face, by which ſome Part of the morbific Matter is evacuated, always vaniſhes on that Day, if the Salivation ſtops at the ſame time, the Patient is infected by the variolous Matter, now become corrupt, as by a Poiſon; and there being no way left for it to paſs off, the Danger is imminent, unleſs, as it ſometimes happens, the Swelling of the Hands be ſo conſiderable, as to ſnatch the Patient from impending Death. This Salivation may be promoted by drinking Small Beer freely, or ſome other Liquor, that neither heats, nor excites Sweat.

Beſides theſe, in order to check the violent Ebullition, and promote the Spitting, Opiates are more proper than any other Remedies; and though, by their incraſſating Quality, they may ſeem, in ſome meaſure, to hinder the Expectoration, yet I have long ſhaken off that Prejudice, and given them in this Diſeaſe with great Succeſs, provided the Patient was above Fourteen.

For as the Blood of Infants and Children, who generally sleep tolerably well throughout this Disease, ferments more gently, it stands less in need of such a Check; besides, by the Use of this Kind of Remedy, the Looseness, which Nature appoints to be an Evacuation for Children in this Species of the Disease, is stopt, to the Detriment of the Patient.

In Adults, the frequent Use of Opiates is attended with the following Advantages: 1. By procuring moderate Rest, they abate the violent Ebullition of the Blood, and prevent a Delirium. 2. They promote the Swelling of the Face and Hands. 3. They support and prolong the Swelling to its natural Period. 4. They promote the Salivation, which, though it may be stopt in some Subjects for a few Hours, by means of so powerful an incrassating Medicine; yet the Strength being increased by these new Helps, Nature resumes fresh Vigour, and happily finishes the Work. 5. I have observed, that the Spitting, which usually abates about the eleventh Day, and sometimes earlier, to the great Detriment of the Patient, by giving Opiates a few times, has been raised anew, and not ceased *before the fourteenth Day*, and sometimes later. I usually give about fourteen Drops of liquid Laudanum, or an Ounce of Syrup of white Poppies, in a little Cowslip-flower-water, or some such distil'd Water, to Adults, every Night after the Eruption is over, to the End of the Disease. And as in the worst Kind of Small Pox a hot Fit, attended with Restlessness, Anxiety, and other Symptoms, generally come on in the Evening; this may, in some measure, be prevented, by administering the Opiate at Six or Seven at Night.

As a Looseness as certainly accompanies the *confluent* Small Pox in Children, as a Salivation in Adults, I take care by no means to check this Looseness; and direct the Children to be kept sometimes in the Cradle, and sometimes taken up, allowing them the same Diet, if they be weaned, as I directed for Adults.

In the Declension of the Disease, when the Face is stiff, occasioned by the Eruptions becoming crusty, hard, and dry, I anoint it frequently with Oil of sweet Almonds, as well to ease the Pain, as to promote a freer Exhalation of the hot *Effluvia*. I use no Endeavours to prevent the Pitting of the Face, as Oils, Liniments, and the like; these only causing the Scurf to scale off more slowly, which is gradually succeeded by unseemly Scars: But the Patient need not be very anxious about these, when, by reason of a previous temperate Regimen, the Eruptions, having been little irritated, have contracted no caustic Quality.

Now though this Method, provided it be carefully and prudently suited to particular Circumstances, will render the Disease very gentle and safe; yet, in some Cases, I find it necessary to use a different Treatment.

First, therefore, if in the *distinct* Kind, by means of an over-hot Regimen, and continual Sweats, the Face does not swell on the eighth Day, but is flaccid, and the Spaces between the Eruptions look pale, whilst the Pustules appear in great abundance; besides using my utmost Endeavours by a more temperate Regimen, to check the violent Motion of the Blood, I immediately direct an Opiate to be given, which, by gently procuring Sleep, (unless the Brain be over-heated) and, consequently, moderating the Tumult raised in the Blood, seasonably determines it, together with the Heat, to the Face, as the Nature of the Disease demands.

But if the Mischief, hence arising, has proceeded so far, that the Sweat, which had hitherto flowed plentifully, ceases spontaneously, the Patient is seized with a Delirium, complains of great Sickness, and makes Urine often in a small Quantity; in this Case, the Danger of Death being imminent, I conceive he can only be reliev'd, either by giving Opiates freely, or taking away a large Quantity of Blood, and exposing his Body to the open Air. Nor will what I have now propos'd seem imprudent, and unreasonable, if we attend to those who have escap'd imminent Death, by the plentiful Bleeding at the Nose, suddenly arising: Besides, it must be considered, that, in this dangerous Extremity, Death does not ensue, because the Eruptions strike in; for they appear red and plump, even when the Patient is expiring; but because the Face does not swell. Now whatever tends to abate the Heat of the Blood, and I conceive, that none will deny that Bleeding, and moderate Cooling, have this Virtue, must necessarily help to promote the Swelling of the Face, as much as the Use of Opiates, and apparently for the same Reasons.

But I would not be understood to advise Bleeding immediately, in every *Delirium* happening in the Small Pox, since no Symptom oftener occurs in this Disease: But, 1. In that only which happens because the Face does not swell, that is, in the *distinct* kind, the Eruptions being, at the same time, pretty numerous; or, 2. Where the Motion of the Blood is become so violent and immoderate, by means of a very hot Regimen, and the Use of Cardiacs, as to render it unsafe to wait till it can be reduced to a due Temper, by Opiates, and other proper Medicines. In such Cases, also, it has frequently seemed sufficient to me, for the Patient to rise and sit up awhile in his raving Fit; by which Expedient I have saved several from Death. And, besides those I have seen, there are numberless Instances of Persons, who, by these means, have been snatched from imminent Danger. For some delirious Persons, deceiving their Nurses, and getting out of Bed, have remained exposed to the cold Air, even in the Night-time; and others have secretly, or by Intreaty, procured cold Water to drink; and thus, by an happy Mistake, saved their Lives, when despaired of.

I shall here set down the History of a Case, which I had from the Person concerned: He told me, that when he was a young Man, he went to *Bristol*, and was there seized with the Small Pox, about Midsummer, followed soon after with a Delirium: His Nurse, going into the City, left him in the mean while to the Care of some other Persons, intending to be back soon; but, making a pretty long Stay, the Patient in the mean while died, as the Attendants thought; who, considering the Heat of the Season, and his Corpulence, that the Body might not smell, took it out of Bed, and laid it naked on a Table, throwing a Sheet over it. The Nurse at length returning, and looking on his Face, she imagined she saw some small Signs of Life, and, therefore, put him to Bed again directly, and brought him to himself; and he recovered in a few Days.

If the Saliva in the confluent Small Pox be render'd so hard and viscid by the preceding Heat, as to endanger Suffocation, which commonly happens on the eleventh Day, a Gargarism must absolutely be used, and great Charge given, to syringe the Throat with it Night and Day. Small Beer, or Barley-water, mixed with Honey of Roses, may be employed for this Purpose, or the following:

> Take of the Bark of Elm, six Drams; Liquorice-root, half an Ounce; twenty stoned Raisins; red Roses, two Pugils: Boil them together, in a sufficient Quantity of Water, to leave a Pint and half; in which, when strained off, dissolve, of simple Oxymel, and Honey of Roses, each two Ounces: Mix the Whole for a Gargarism.

But, if the Patient has been treated in a proper manner, the Salivation, even though it has begun to abate, will so effectually answer its End, as to render this Remedy superfluous. And, in reality, when the Patient is every moment in danger of Suffocation, oppressed with a *Stupor*, and breathes with the utmost Difficulty, it is not safe to trust to this Remedy. In this Case I have sometimes seasonably and successfully given a Vomit, of the Infusion of *Crocus Metallorum*, in a larger Dose than ordinary, to an Ounce and an half; because the Stupor is so considerable, that a smaller Quantity will not operate, but by disturbing those Humours which it cannot eject, greatly endangers the Life of the Patient. Neither can we wholly trust to this Remedy, and, which is truly to be regretted, we are hitherto unprovided with a more certain and effectual one, to conquer this dreadful Symptom, which alone destroys most of those who die on the eleventh Day, in this kind of Small Pox.

As the other Symptoms happening in this Distemper are prevented, so, likewise, most of them are relieved, by a temperate Regimen. For Instance, as the Delirium above-mentioned, proceeding from the too great Heat of the Brain, is removed by cooling the Blood, so, by the same means, a Coma is easily remedied; which seems to be a quite different Symptom. By cooling the Blood in this manner, I have seen purple Spots removed; but have not yet been able, by this or any other Method, to stop bloody Urine, or a violent Flux of Blood from the Lungs; but so far as I have hitherto observed, both these Hæmorrhages prognosticate certain Death.

In a Suppression of Urine, which sometimes happens in the Young and Vigorous, from the great Confusion and Disorder of the Spirits, subservient to this Excretion, by reason of the immoderate Heat and Agitation of the Blood and Juices, I have had recourse to all the Kinds of Diuretics; but nothing has succeeded so well with me as taking the Patient out of Bed, who, after walking twice or thrice cross the Room, supported by the Attendants, has immediately voided Urine pretty plentifully, to his great Relief.

But the Symptoms proceeding from the Striking-in of the variolous Matter from intense Cold, or unseasonable Evacuations, must be remedied by Cardiacs, and a suitable Regimen; which, however, must not be continued longer than those Symptoms last: The principal of these are a Depression, or Sinking of the Pustules, and a Looseness, both in the *distinct* Kind: For, in the *confluent* Kind, neither the Depression nor Sinking of the Pustules, threaten Danger, this being the Nature of the Disease; nor a Looseness in Children, because it promotes their Recovery. In either Case, it is highly proper to give a cordial Draught, made of some proper distilled Waters, mixed with Diascordium, liquid Laudanum, and the like, not only to re-

move the above-mentioned Symptoms, but at any time of the Diſeaſe, if the Patient complains of a Pain at the Heart and Sickneſs. I judge, that the Notion of the frequent Striking-in of the Eruptions, proceeds from hence, that ſuch as have obſerved the Depreſſion of them, in the *confluent* Kind, eſteemed it to be a Striking in of the variolous Matter from taking Cold; whereas here it is only the Nature of the Diſeaſe; and they ſuſpect the ſame in the diſtinct Kind, becauſe they look for the Eruption, and Increaſe of the Puſtules, before the due time; not having ſufficiently attended to the time wherein Nature uſually finiſhes the Suppuration of this Kind of Small Pox.

When the Patient begins to recover, and the Eruptions ſcale off, and he has eat Fleſh a few Days, for Example, the one-and-twentieth Day, I judge it requiſite to bleed in the Arm, if the Diſeaſe has been violent: For the Inflammation communicated to the Blood by the Small Pox, whether in Adults or Children, equally indicates Bleeding; as the Foulneſs collected in the Habit, does Purging; as appears ſufficiently both from the Colour of the Blood, taken away after a ſevere Small Pox, which exactly reſembles that of Pleuritics; and, likewiſe, from the great Inflammations that fall on the Eyes, after it is gone off; and other pernicious Effects, ariſing from the Blood over-heated, and vitiated thereby: Hence, alſo, it follows, that ſuch as enjoyed a good State before the Attack, are afterwards afflicted with a Defluxion of ſharp hot Humours upon the Lungs, or ſome other Part, for the Remainder of Life. But if the Puſtules were few, Bleeding is unneceſſary: After Bleeding I purge three or four times.

After the Patient has been long recovered from the confluent Small Pox, and riſes every Day, there ſometimes happens a troubleſome Swelling of the Legs; which either goes off ſpontaneouſly, after Bleeding and Purging; or is eaſily cured by the Uſe of Fomentations, made of emollient and diſcutient Herbs, boiled in Milk; as the Leaves of Mallows, Mullein, Elder, Laurel, and Chamomile and Melilot-flowers. *Sydenham.*

Theſe Species of Small Pox, adds Dr. *Sydenham*, prevailed in 1667. 1668. and Part of 1669. which he choſe to call *legitimate*, or *regular*, to diſtinguiſh them from the other Kinds that ſucceeded them, in the Years 1670. 1671. and 1672. which he denominated *anomalous*, or *irregular*; and gives us the following Account of them.

The irregular Species of Small Pox was introduced by the Meaſles, (ſee MORBILLI), and aroſe in the Beginning of *January*, 1670. much about the ſame time that the Meaſles did; and though it was not ſo epidemic, it, notwithſtanding, accompanied that Diſeaſe whilſt it prevailed, and continued after it went off, as long as this Conſtitution laſted. Nevertheleſs it yielded to the Dyſentery, which raged in Autumn, this Seaſon being peculiarly diſpoſed to favour it. But in the Winter this Kind of Small Pox returned again, the Dyſentery being overcome by the Cold. In this Order did theſe Diſtempers ſucceed each other, through all the Years of this Conſtitution, except that in Autumn 1672. the laſt Year it prevailed, the Conſtitution being then in its Decline, and ſlowly promoting the Dyſentery, which, at that time, was, alſo, declining, the Small Pox, contrary to Cuſtom, raged, alſo, at the ſame time, and prevailed ſo equally with the Dyſentery, that it was not eaſy to aſcertain, which of the two Diſeaſes were moſt predominant, though, to me, the Dyſentery ſeemed to prevail. This Small Pox, like other Epidemics, was very violent in the Beginning, and increaſed daily till it came to the Height; after which it gradually decreaſed, both with reſpect to the Violence of the Symptoms, and the Numbers it attacked.

I was very much ſurpriſed, upon the Riſe of this Small Pox, when I found that it differed, in ſeveral conſiderable Symptoms, from the Kind produced by the preceding Conſtitution, already deſcribed. Of theſe different Symptoms I ſhall now treat, omitting thoſe which were common to both Species.

The diſtinct Kind of this Small Pox differed from the common diſtinct one, of the preceding Conſtitution, only in the following Symptoms: 1. The Eruptions generally came out on the third Day, which indeed is uſual in the confluent Sort; whereas, in the diſtinct Kind of the former Conſtitution, they appeared not before the fourth Day. 2. They did not grow ſo big, in the Courſe of the Diſeaſe, as thoſe of that kind. But, 3. Were more inflamed; and, in their Declenſion, after their Suppuration, frequently looked black. 4. Sometimes, but very rarely, a Spitting happened, as in the confluent Kind, though the Eruptions were very few. Whence it appears, that the Small Pox of this Conſtitution greatly reſembled the confluent Kind; and was attended with a more violent Inflammation, than is uſual in the diſtinct Kind.

The confluent Species of this Conſtitution, differed from thoſe I had obſerved in other Years, in ſeveral Particulars: 1. The Eruptions ſometimes appeared on the ſecond Day; at others on the third, in Form of an equal rediſh Swelling, covering the whole Face, and thicker than an Eryſipelas; nor could any Spaces eaſily be perceived between the Eruptions. 2. The reſt of the Body ſeemed to be overſpread with an almoſt infinite Number of red inflamed Puſtules, joined together in one. 3. In the intermediate Spaces, eſpecially in the Thighs, little Bladders aroſe, like thoſe occaſioned by Burns, full of a limpid Serum, which flowed out plentifully, upon the Burſting of the Skin, the Fleſh underneath appearing black, and as if it were gangrened. This dreadful Symptom happened very rarely, and only in the firſt Month that this Species prevailed, but proved always mortal. 4. About the eleventh Day, a white ſhining Pellicle extended itſelf over the rediſh Humour, in ſeveral Parts of the Face; and, by degrees, over the Whole. 5. Soon after, this Pellicle diſcharged a ſhining cruſty Matter, not of a yellow or brown Colour, as in the other Small Pox; but of a deep-red, like congealed Blood, which, as the Puſtules ripened, grew every Day blacker, till at length the whole Face appeared as black as Soot. 6. And whereas, in the other Kind of confluent Small Pox, the Patient was in moſt Danger on the eleventh Day, which put an End to the Lives of the greateſt Part of thoſe that died; in this Sort, unleſs an extreme hot Regimen deſtroyed him in a ſhorter time, he generally lived to the fourteenth, and ſometimes to the ſeventeenth Day, after which the Danger was over. 7. But thoſe who had the Bladders with the Mortification, died in a few Days after the Eruption. 8. The Fever, and all other Symptoms, which either preceded or accompanied this Species of the Small Pox, were more violent, than in the foregoing Kind; and it had manifeſt Signs of greater Inflammation. 9. The Patient was more ſubject to a Spitting. 10. The Puſtules were conſiderably more inflamed, and much ſmaller; ſo that it was difficult, upon their firſt Appearance, to diſtinguiſh them from an *Eryſipelas*, or the Meaſles. 11. The Scales remained a long time after the Eruptions vaniſhed, and left more unſeemly Scars behind them. It is worthy of Notice, that during the whole three Years which this Conſtitution laſted, in which the Dyſentery raged ſo epidemically, the Small Pox, when exaſperated by an immoderate hot Regimen, ſometimes terminated in a Dyſentery.

But this Small Pox was not attended with ſuch fatal Symptoms during the whole time of its Continuance; for, after having prevailed two Years, it began to grow milder in 1672. and the Eruptions having loſt their Blackneſs, grew by degrees yellow, like an Honey-comb, which is peculiar to the regular Small Pox, during the Suppuration of the Puſtules; ſo that in the laſt Year of this Conſtitution, it proved very mild and gentle, conſidering its Kind. Nevertheleſs it is manifeſtly to be referred to a quite different Species, on account, 1. Of the remarkable Smalneſs of the Eruptions. 2. The Tendency to a Salivation: And, 3. Other concomitant Symptoms.

As this Species was attended with greater Inflammation than the other, the ſole Intention in the Cure muſt be, to give a greater Check to the violent Ebullition of the Blood. And this is chiefly effected by a temperate Regimen, after exhibiting Opiates, as above directed; and allowing the free Uſe of ſome Liquor that is not heating, but will rather immediately abate the violent Heat, wherewith this Diſeaſe is attended, eſpecially during the time of the Suppuration of the Puſtules. The white Decoction, made of Bread, and a ſmall Quantity of burnt Hartſhorn, boiled in a large Proportion of Water, and ſweetened with Sugar, is beneficial here: But Milk, boiled with thrice its Quantity of Water, is generally a more grateful Liquor, and better anſwers the End of Cooling: Nor is the Abundance of Liquor only proper to diminiſh the extreme Heat, which chiefly prevails during the ſecondary Fever, but it, alſo, promotes the Salivation, and keeps it up longer than it could be continued, if the Patient were over-heated. And further I have often obſerved, that cooling Liquors, drank plentifully, have ſucceeded ſo well, that, by the Uſe thereof, the Small Pox, which appeared at the Beginning with the worſt Signs of the confluent Kind, has, in the Courſe of the Diſeaſe, been rendered diſtinct; and the Eruptions, which, as they ripened, would otherwiſe have firſt diſcharged a red, and ſoon after a black Matter, have looked very yellow; and inſtead of being inflamed, and very ſmall, proved of a mild and good Kind.

Nor does the menſtrual Diſcharge, which frequently happens in this Diſeaſe, forbid, but rather encourage the free Uſe of theſe Liquors; eſpecially if it comes at an unuſual Time. For Women are endangered here from no other Cauſe but from the Blood's being too much attenuated, ſo that it eſcapes where it can find a Paſſage; eſpecially when unſkilful Nurſes add Oil to the Flame, by uſing an hot Regimen. Now whatever greatly dilutes and cools the Blood, as it checks this Flux, does neceſſarily, though not immediately, tend to preſerve the Eruptions, and the Swelling of the Face and Hands, in their due State; whereas heating Remedies, although they may ſeem

better

better ſuited to this Purpoſe, yet, as they promote this Diſcharge, they fall ſhort of anſwering the End, even though Aſtringents be mixed with the Cardiacs.

I lately attended a Lady, who had this dangerous black Small Pox; and though I forbid every thing, at the Beginning, which might agitate the Blood, yet, as ſhe was of a very ſanguine Complexion, in the Flower of her Age, and of a lively Diſpoſition, and the Weather, at the ſame time, very warm, ſhe was ſuddenly ſeized, on the third Day after the Eruption, with ſo copious a menſtrual Diſcharge, at an unuſual time, that the Women about her ſuſpected ſhe had miſcarried. Though this Symptom was very urgent for ſeveral Days, yet I did not, therefore, judge that the Uſe of the Milk and Water was to be diſcontinued, but rather eſteemed it neceſſary to be drank plentifully now, and, alſo, through the whole Courſe of the Diſeaſe; particularly on the coming on of the Suppuratory Fever. This Liquor ſhe often declared, was particularly grateful to her, promoted the Spitting, and both cooled and refreſhed her. But, when the Face began to harden, leſt the Patient ſhould be injured by the putrid Vapours proceeding from the purulent Matter of the Eruptions, which had a very fetid Smell in this worſt Kind of Small Pox, a few Spoonfuls of mulled Sack were directed to be taken once a Day, or as often as ſhe perceived any Sickneſs at her Stomach. By the Uſe of theſe few Things, along with a quieting Draught every Night, ſhe recovered, without having been attacked with a Delirium, or any other dangerous Symptom, except the Hæmorrhage. The Face and Hands ſwelled ſufficiently; the Eruptions were as large as this Kind of Small Pox would permit; the Salivation was eaſy and copious to the End; and though the Eruptions in the Face, ſeemed blackiſh whilſt they ripened, yet they were yellow in moſt other Parts.

But how much ſoever this Kind of Small Pox, peculiar to this Conſtitution, exceeded thoſe of other Conſtitutions in point of Heat and Inflammation, yet, when the Eruptions were diſtinct, or few, Experience ſhewed it to be needleſs to drink ſo copiouſly of the above-mentioned Liquors. But it ſufficed if the Patient drank Small Beer, as the Thirſt required, and ſupped Water-gruel and Panada, and ſometimes eat a roaſted Apple; and if he exceeded Fourteen, took a Doſe of *Diacodium*, when he was ſick, or delirious for want of Reſt: And I did nothing more, when the Puſtules were few, except keeping the Patient in Bed.

The ſame excellent Phyſician, in his Epiſtle to Dr. *Cole*, dated *Jan.* 20. 1681-2. gives us farther Obſervations on the Small Pox; which, he informs us, are the Reſult of longer Experience.

Previous to theſe Remarks, ſays he, I muſt obſerve, that a Species of intermitting Fevers, which aroſe in 1677. ſtill prevailed in 1681. Theſe Fevers, throughout thoſe Years in which they reigned, like all Epidemics, principally raged in thoſe Seaſons, that conſpired moſt with their Nature; but, upon the Approach of another Seaſon, yielded to ſuch Epidemics, as that Seaſon principally favoured. Thus, upon the coming in of Winter, they always yielded to the Cough, and peripneumonic Fevers, and, alſo, to the Small Pox; but, upon the Return of the Spring, they re-appeared. So, in the Year 1680. when theſe Intermittents had prevailed univerſally during the Autumn, the Small Pox ſucceeded them in the Winter, and ſpread much. But in 1681. the Intermittents returned, though they did not ſpread ſo epidemically, their Violence being abated; ſo that the Small Pox, in ſome Places, appeared along with them. But, at the Beginning of Summer, the Small Pox increaſed every Day, and, at length, became epidemical.

It now appeared to me manifeſtly improper to confine the Patient conſtantly in Bed, before the total Eruption of the Puſtules; for the Spring and Summer having been the drieſt Seaſon that any Perſon could remember, the Blood was, by theſe means, deprived of the greater Part of the Humidity, which the Air otherwiſe uſually communicated to it: Whence the then reigning Small Pox was accompanied with a more conſiderable Inflammation than ordinary; and the other Symptoms thence ariſing were more violent. This I conceive was the Cauſe that purple Spots frequently preceded the total Eruption of the Puſtules; and that the violent Inflammation which expelled them, by diſſolving the Texture of the Blood, ſuddenly deſtroyed the Patient, before the due Expulſion of the morbific Matter. The Diſeaſe proved the more deſtructive, becauſe the Eruptions more readily run together; the Intemperature of the Air now doing the ſame Miſchief ſpontaneouſly, which ignorant Practitioners ordinarily occaſion, by uſing an hot Regimen and Cardiacs, at the Beginning of the Diſtemper: For the Danger of the Small Pox is leaſt, when the Eruptions are few; and greateſt, when they are numerous; but the bloody Urine, and purple Spots, deſtroy the Patient, before the total Eruption of the Puſtules.

It is eaſy to account for the Patient's being more or leſs endangered, in proportion to the Paucity or Number of the Eruptions; for as every Puſtule is, at firſt, a Phlegmon, though of a very ſmall Size, and ſoon impoſtumates, ſo a ſecondary Fever, which depends on the Matter hereafter to be produced, muſt needs be more or leſs violent, at the Height of the Diſeaſe, according to the Quantity of Matter to be ſuppurated, which is uſually completed in the mildeſt Species of the confluent Small Pox, on the eleventh Day; in the middle Sort, on the fourteenth; and the worſt, on the ſeventeenth Day.

Now a Phlegmon in the Arm, or any other Part, will occaſion a Fever whilſt it ſuppurates; the Blood being inflamed by the purulent Particles, which are received into the Maſs from the Veins, according to the Laws of Circulation; and thus giving Riſe to the Fever: Hence the Phyſician has more Reaſon to foretel Death, on one of the above-mentioned Days, when the Face, at the Beginning of the Diſeaſe, appears totally covered with ſmall Eruptions, reſembling the Filings of Steel, on account of the extreme Violence of the ſucceeding Fever, which neceſſarily rages in proportion to the Quantity of Matter thrown out of theſe innumerable Impoſtumes into the Blood. And it is eaſy to foreſee the Deſtruction of the Patient ſome Days before it happens, though he think himſelf in a fair Way.

If, therefore, the Danger of the Patient proceeds only from the Abundance of the Eruptions, I uſe all my Endeavours to repreſs them, which is the Way to relieve the Patient; every thing being doubtful and dangerous, when this Species of the Diſeaſe is confirmed; ſo that, if the Patient ſhould eſcape, it may rather be aſcribed to ſome Bleeding at the Noſe, or other accidental Alteration, happening in the Courſe of the Diſeaſe, than to the Care of the Phyſician. Now ſuch an extraordinary Eruption of the Puſtules proceeds from the too ſudden Aſſimilation of the variolous Matter; which ſeems principally to ariſe, either from the over-hot and ſpirituous Conſtitution of the Patient, or from his having raiſed the Fermentation too high, by a too early Confinement in Bed; the Uſe of hot Cardiacs, or any ſpirituous Liquor.

The immoderate Aſſimilation of the variolous Matter, however, cannot be more effectually promoted, than by the Patient's confining himſelf in Bed unſeaſonably, that is, before the ſixth Day from the Beginning of the Illneſs; or the fourth incluſive from the Eruption, when all the Puſtules are come out, and no more are expected. And though the moderate Warmth of the Bed, even after this Time, does in ſome Meaſure contribute to the Riſe of the Delirium, Watching, and other Symptoms, yet theſe are of ſuch a Nature, that they readily yield to proper Remedies; whilſt the imminent Danger of Death, that happens on the eleventh Day, from the great Abundance of the Puſtules, cannot be prevented or removed by Medicine.

The Patient, therefore, is here to be diligently admoniſhed, by no means to keep his Bed in the Day-time, till towards the Evening of the ſixth Day; whereby the Eruptions will be fewer, and he will be greatly refreſhed. But, after this time, if the Puſtules be very numerous, he will ſcarce be able to leave his Bed at all, on account of the Pain thence ariſing, and a greater Diſpoſition to Fainting, upon ſitting up; ſo that having frequently remarked this, I imagined, that Nature, in the common Courſe of the Diſeaſe, firſt pointed out the Time, when a total Confinement in Bed becomes neceſſary.

For the Eſſence of this Diſeaſe ſeems to conſiſt in a peculiar Inflammation of the Blood; in the Courſe of which, Nature is employed for ſome Days, in the Beginning, in preparing and moulding the inflamed Particles, for their readier Expulſion to the external Parts; at which time the Blood being diſturbed, a Fever muſt needs be occaſioned. For the agitated Particles, hurrying in a tumultuary manner through the Veſſels, neceſſarily cauſe a Sickneſs at the Stomach, ſharp Pains in the Head, and all the other Symptoms preceding the Expulſion, according as they are carried to this or that particular Part. But when the Eruption is over, the fleſhy Part becomes the Seat of the Diſeaſe; and, as Nature has no other Method of expelling the peccant Matter from the Blood, but by raiſing a Fever, ſo, likewiſe, it does not free the fleſhy Parts from any extraneous Body, but by Impoſtumation: Thus, if, by Accident, a Thorn, or the like ſharp-pointed Body, be lodged in the Fleſh, unleſs it be immediately extracted, the Parts around ſoon impoſtumate. Hence, when their Particles are lodged in the Fleſh, they at firſt occaſion very ſmall Phlegmons, wherein they lie concealed; which increaſing every Hour, and becoming more inflamed, at length come to Suppuration, when a Part of the Matter muſt needs be abſorbed by the Blood, which returns by the Veins; and if too large a Quantity thereof be received into the Maſs, it is not only productive of a Fever, which the debilitated Patient is unable to bear, but, alſo, taints the whole Maſs. Beſides, by the extreme Heat of the

Fever, during the laſt Days of the Illneſs, the Salivation, which ought always to accompany the confluent Small Pox, is ſtopt too ſoon; whence immediate Death enſues. But, if only a ſmall Quantity of the purulent Matter be received into the Blood, the Violence of the ſecondary Fever is eaſily checked by the increaſing Strength of Nature, and, the Puſtules drying away gradually, the Patient ſoon recovers.

Hence it is manifeſt, that if theſe hot and ſpirituous Particles be quickened by hot Medicines, and eſpecially by a conſtant Confinement in Bed, the aſſimilating Virtue, which they already poſſeſs in too great a Degree, will neceſſarily be heightened and increaſed. Beſides, the Blood, and other Juices, being hereby heated, yield more readily to the ſtronger Impreſſion of the Particles; whence more Eruptions appear than ſhould. Whereas the moderate cooling Regimen, and the free Uſe of the Air, not only abate the Force of the hot tumultuary Particles; but, alſo, thicken and ſtrengthen the Juices; whence they are better enabled to reſiſt the morbific Spirits, and ſupport their Violence: And hence no greater Quantity of variolous Matter is prepared, than is natural in this Diſeaſe.

A too early Confinement in Bed produces, beſides the Aſſimilation of too large a Quantity of the morbific Matter, and the immoderate Exaltation of the Ferment of the Diſeaſe, bloody Urine, and purple Spots, eſpecially in Summer, and in Perſons in the Vigour of Life. I conceive, that both theſe Symptoms proceed from the Heat and Commotion raiſed in the Blood, by hot and ſpirituous Particles, by which it is exagitated, and conſiderably attenuated, ſo that it burſts the Veſſels, cauſing bloody Urine, when it forces its way through the Kidneys; and purple Spots, when it is ſtrained through the Extremities of the Arteries, terminating in the Muſcles and Skin, which reſemble ſo many Mortifications in thoſe Parts wherein the extravaſated Blood is coagulated. And though both theſe Symptoms might have been eaſily prevented by a cooling Regimen and Diet, yet, when they actually appear, all Remedies prove ineffectual.

It is not only unſafe to keep the Patient always in Bed the firſt Days of the Illneſs, but ſometimes neceſſary to expoſe him to the open Air; eſpecially if it be the Summer-ſeaſon, and he not paſt the Prime of Life, or if he has been accuſtomed to ſpirituous Liquors; and, particularly, if the Diſeaſe proceeds from hard drinking.

I have hitherto found, that Bleeding, though it be uſed early, does not ſo effectually check the over-haſty Aſſimilation of the variolous Matter, as cooling the Blood by the Air received by Inſpiration, eſpecially if the Patient be put to Bed immediately after the Operation, and injoined by hot Cardiacs; the Blood being by theſe means, more diſpoſed to receive the Impreſſions of the adventitious Heat, than it was before Bleeding. And one of the worſt Caſes I ever met with in the confluent Small Pox, happened in a young Woman ſoon after her Recovery from a Rheumatiſm, by the uſual Method of copious and repeated Bleeding, who died on the eleventh Day. From this Inſtance I firſt learned, that Bleeding did not contribute ſo much to keep the Small Pox within its due Limits, as I had imagined; though I have frequently obſerved, that repeated Purging, while the Blood remains unaffected, generally renders the ſubſequent Small Pox of a mild and diſtinct Kind.

To this Method it is objected, that ſitting up in the firſt Days of the Diſeaſe hinders the Eruption of the Puſtules, and of courſe prolongs the Sickneſs, and other Symptoms, which indeed I own, and Experience confirms it. But then it muſt be inquired, whether it is moſt dangerous to give a little Check to the variolous Matter, and thus prolong the Sickneſs by keeping back the Eruption; or to urge the Ferment of the Diſeaſe, and aſſimilate ſo large a Quantity of variolous Matter, as to endanger the Life of the Patient by the ſecondary Fever. I conceive it will appear, upon duly conſidering the Matter, that very few have died merely becauſe the Small Pox did not come out ſooner or later; unleſs, perhaps, a few of thoſe, whoſe Blood, being inflamed by exceſſive Heat and Motion, circulated with ſuch Velocity, as not to allow ſufficient Time for the morbific Matter to be expelled ſlowly; which is an Argument in favour of my Opinion.

For we may be aſſured, though nothing be done, that the variolous Matter will at length be conquered by Nature, and driven to the Skin; eſpecially as the Coſtiveneſs of the Patient to this time, promiſes a certain, though a late Eruption of the Puſtules afterwards. But of the many dangerous Symptoms which enſue, when the Eruption is unſeaſonably promoted, I ſhall only mention the principal: 1. The Number of Eruptions is too much augmented; and thus the ſecondary Fever is proportionably increaſed. 2. Bloody Urine, and purple Spots are produced. 3. The immoderate Exaltation of the Ferment frequently increaſes the Force of the variolous Matter ſo much, that the Patient ſinks at the Beginning of the Diſeaſe; when the morbific Matter cannot diſentangle itſelf, and come out, by reaſon of the confuſed and irregular Motion raiſed in the Blood.

If it be demanded, why a proper Separation of the variolous Matter may not be as well promoted at the Beginning of the Diſeaſe, by refreſhing the Patient with the moderate Warmth of the Bed, as without it; I aſk, by way of Reply, whether Experience does not teſtify, that a Perſon in Winter, whilſt he lies in Bed moderately covered, without a Fire in the Room, is much warmer than when he ſits up in it well cloathed? And if the Difference here be remarkable, I next inquire, which of theſe Methods is beſt adapted to check the immoderate Motion of the variolous Ferment?

But what has principally impoſed upon the Unattentive in this Caſe is, their having obſerved a Tendency in the Patient to ſpontaneous Sweats; which continually flowing whilſt he remained in Bed, greatly abated the feveriſh Heats, otherwiſe than in thoſe who did not ſweat. Let us therefore conſider, why we ſo ſolicitouſly endeavour to check the Fever, ſince it is the Inſtrument which Nature ordinarily and principally uſes in preparing and expelling all kinds of noxious Matter, which lurk in the Blood. It is evident, that whilſt we carefully promote Sweat, in order to leſſen the Fever, we thus drive out a crude and indigeſted Humour, like unripe Fruit, and afterwards cauſe a Fever; the Serum of the Blood, with which the Blood itſelf, and thoſe newly generated hot variolous Particles are diluted, is expelled, whilſt the Particles, being freed from the Serum waſted by the Sweat, have their Violence and Activity increaſed.

But it is to be obſerved, that I injoin the Patient to refrain from Bed, on Suppoſition only, that the approaching Small Pox is of the confluent Kind. For in the diſtinct Species, if it can be certainly foreſeen, the Patient need neither be confined to Bed, nor injoined to ſit up, as the Paucity of the Eruptions prevents all Danger either way.

Hence, then, it appears to me from frequent Experience, that he who refrains from Bed in the Day-time, at the Beginning of the Diſeaſe, abſtains entirely from Fleſh, and drinks only ſmall Liquors, is abundantly ſafer than he who confines himſelf immediately in Bed, and takes hot Cardiacs. And the Patient finds a ſingular Refreſhment from the Admiſſion of freſh Air, every time he is taken out of his warm Bed; which all thoſe, whom I was ſuffered to treat in this manner, thankfully acknowledged. Whence it ſhould ſeem, that more regard is due to the Appetites and Longings of the Patient, if they be not very irregular, or immediately deſtructive, than is due to the more precarious and fallacious Rules of the Healing Art.

But, how advantageous ſoever it may be, in general, to keep the Patient from Bed at the Beginning of the Diſeaſe, yet ſometimes he muſt be wholly confined to it before the Eruption. Thus, when a Child, after Dentition, is ſuddenly ſeized with Convulſions, we are to conſider, that this probably ariſes from the Endeavour of Nature to drive out the Eruptions of the Small Pox, Meaſles, or Scarlet Fever, though they yet lie concealed in the Skin. In this dangerous Caſe, a Bliſter muſt be immediately applied to the Neck, and the Child put to Bed, and a Cordial exhibited with a ſmall Quantity of an Opiate; by which the Cauſe of the Diſeaſe may be more forcibly expelled, and the Diſturbance, alſo, quieted, which gave Riſe to the Fit. Thus, for a Child of three Years of Age, I preſcribe five Drops of Liquid Laudanum in a Spoonful of Plague-water, or the like. I ſuſpect, that Thouſands of Children, beſides ſome Adults, have been deſtroyed for want of conſidering, that theſe Convulſions are only the Forerunners of the above-mentioned Diſeaſes; whereas inconſiderate Practitioners, taking theſe Fits, which are really ſymptomatical, for eſſential Diſeaſes, and attempting the Cure by a frequent Repetition of Clyſters, and other Evacuations, hinder the Eruption of the Small Pox, and prolong the Fits, which they ſo ſolicitouſly endeavour to conquer, and which would otherwiſe aſſuredly vaniſh ſpontaneouſly, upon the Appearance of the Puſtules. Beſides, the Small Pox, that is preceded by Convulſions in Children, is generally diſtinct; ſo that the Patient may be put to Bed with much leſs Danger in the Beginning of the Diſeaſe.

But I have obſerved, that the Small Pox, which immediately ſucceeds comatous Diſorders, proves very confluent; in which Caſe I rather order a Bliſter, and the Opiate deſcribed above, than let the Patient keep his Bed before the Eruption. But ſometimes, though very rarely, I have known the Fits of Intermittents preceded by ſuch Convulſions; and have often ſeen them begun, and terminated, by comatous Diſorders, both in Children and Adults: But both theſe Symptoms require no particular Treatment, it being only neceſſary to oppoſe the Fever, which is the primary and eſſential Diſeaſe. For, if I were to attend principally to theſe comatous Diſorders accompanying the Fever, and accordingly endeavour to conquer them by Bleeding, Purging, and repeated Clyſters, I ſhould heighten

the Fever, and conſequently increaſe the Coma, ſo as to convert it into a fatal Lethargy; whereas, if I uſe all my Efforts to cure the Fever, the other Symptoms proceeding from it will eaſily vaniſh.

Though the Patient may ſometimes refrain from Bed in the Day-time, yet in extreme Sickneſs, an high Fever, enormous Vomiting, a Vertigo, rheumatic Pains of the Limbs, and the like Diſorders, he cannot be indulged this Refreſhment, theſe Symptoms indicating the contrary; which, if they be violent, eſpecially in the young and ſanguine, prognoſticate, that a large Quantity of variolous Matter is generated in the Body, and threaten great Danger from the tumultuary Eruption of the Puſtules, which will prove very confluent. In this Caſe, therefore, as all Endeavours muſt be uſed to check the immoderate Ferment, which will rage more by the continual Warmth of the Bed, and yet the Patient cannot be kept up by reaſon of extreme Sickneſs, it is indiſpenſably neceſſary to bleed firſt in the Arm, and a few Hours after to give a Vomit of the Infuſion of *Crocus Metallorum*, which not only expels the Matter occaſioning this unuſual Sickneſs, but refreſhes the Patient ſo conſiderably, that being much relieved, he is able to refrain from Bed; and, in order to weaken the Force of the Ferment further, it will, alſo, be proper to give him a large Doſe of Spirit of Vitriol in every Draught of Small Beer, till the Eruption be over. Notwithſtanding theſe Evacuations, and the Uſe of the cooling Drink, the Patient muſt refrain from Bed in the Day-time, if he can bear to ſit up; becauſe theſe general Remedies do not check the Aſſimilation of the variolous Matter ſo effectually, as once cooling the Blood by drawing in the freſh Air, and breathing it out by the Lungs, which alone immediately abates the ſymptomatic Sickneſs, as I have often experienced. But this unuſual Method is neceſſary in thoſe only who are in the Prime of Life, whoſe Blood has been over-heated by Venery or Wine, and in others, (always excepting young Children) who, together with the Small Pox, ſtruggle with the above-mentioned violent Symptoms. For, where the Blood is leſs inflamed, and the Symptoms milder, as there is much leſs Danger of aſſimilating the variolous Matter too haſtily, neither the Evacuations, nor the Spirit of Vitriol, need be uſed.

The Eruption being completed, which happens on the ſixth Day from the Beginning of the Illneſs, or the fourth, incluſive, from the firſt Appearance of the Puſtules, the Patient is not to be longer detained from Bed, as the Caſe will ſcarcely admit of its being longer delay'd, if the Small Pox be of the confluent Kind. And let it be remembered, that this is the only Species of which I am now treating; for, if the Eruptions be few and diſtinct, there is naturally little Danger.

From this time, the Eruptions increaſe in Magnitude, and inflame the whole Body, eſpecially the Head; ſo that the Patient, if not a Child, grows reſtleſs, and cannot ſleep readily, which is next to be carefully attended to in this Diſeaſe; for the calmer the Motion of the Blood is, the better the Puſtules fill, and come to their due Size; and, on the contrary, the more violent it is, the more the Eruptions ſink, their farther Progreſs being checked; ſo that the Expulſion of the peccant Matter is not only obſtructed, but the Order and natural Progreſs of every particular Phlegmon is, alſo, diſturbed; whence the Eruptions either do not come to Suppuration in due time, or, inſtead of *Pus*, an *Ichor* is at length generated; and, inſtead of the yellow Matter, reſembling the Colour of an Honeycomb, ſome black, or other preternatural Humour, unlike the genuine Eruptions of the Small Pox, is diſcharged. I conceive, therefore, that Opiates are as much indicated in the Small Pox, as any particular Remedy in any other Diſeaſe, as they quiet the tumultuary Motion of the Blood and Spirits, which always accompanies the confluent Small Pox. He, therefore, is not enough acquainted with the Nature of this Diſeaſe, who eſteems theſe Symptoms to proceed only from the Watchings; for though it may ſometimes happen, in Watchings, that the Patient's Spirits may be compoſed and calm, which frequently proceeds from taking Laudanum, ſo, alſo, the Spirits, being ſometimes in violent Motion, check the laudable Eruption of the Puſtules, though the Patient ſleeps much, which is worthy of Obſervation.

Though I have given Laudanum ſeveral Years ſucceſsfully in this Caſe, yet I give the Preference to Syrup of Poppies, becauſe I eſteem Laudanum more heating; but both may be uſed for the ſame Purpoſe. As to the Doſe of this Syrup, it is to be proportioned to the Age of the Patient, and the Urgency of the Symptoms; for what might be too much for one whoſe Spirits are compoſed, would be too little for another, whoſe Spirits are greatly agitated. For Inſtance, ſuppoſe in general, that ſix Drams is a ſufficient Doſe, yet in the Small Pox, when the Medicine is required, near an Ounce muſt be given, in order to obtain the deſired Effect; and as much muſt be preſcribed for a Doſe, throughout the Courſe of the Diſeaſe. We ſpeak of Adults now; for in Children, the Doſe muſt be leſſened in proportion to their Age. Children, however, have not the ſame Occaſion for Opiates in this Diſeaſe, as Adults, becauſe they are more diſpoſed to ſleep during the Courſe thereof; yet, when they are much endangered by the Diſeaſe, I ſhould be afraid to refrain from Opiates. But it is difficult to ſettle the Doſe of Opiates; for whether they be required in a tumultuary Motion of the Spirits, a violent Vomiting and Purging, or ſevere Pain, theſe being the three Diſorders in which Opiates are principally indicated, they are to be exhibited in ſuch a manner, that if the firſt Doſe avails not, it is to be repeated at proper Intervals, till it anſwers the Intention of the Phyſician, having leſs regard to the Quantity taken, than to the Effect it ſhould produce; which being anſwered, it is to be adminiſtered leſs frequently and copiouſly. Nor muſt we forget to interpoſe ſuch a Space between every Doſe, that we may be able to learn, whether the laſt has taken Effect, before preſcribing another; which being obtained, the Doſe is to be diminiſhed in the Courſe of the Diſeaſe, as there ſhall be Occaſion.

This Method I ſhall illuſtrate by a Caſe: On *April* 13. 1681. a Neighbour of mine came to me in Tears, begging, that I would viſit her Son about ten Years of Age, who having been ill four Days, ſhe apprehended the Small Pox. The Mother had, by the Advice of ſome Woman, given him the Counteſs of *Kent*'s Powder, and other hot Medicines; and had beſides, in a manner, buried him under the Cloaths, in order to raiſe a Sweat, to which the Women have recourſe in this Diſeaſe, as an aſſured Remedy. She had, alſo, given him a large Quantity of Poſſet-drink, in which Marigold-flowers and Hartſhorn had been boiled; which increaſed the Fever, and cauſed ſuch a Diſturbance of the Spirits, that the Child was very delirious, and could not be kept in Bed by the Attendants. The Puſtules did not yet appear, at leaſt very viſibly, but lay very thick in the Skin, the Eruption being manifeſtly hindered by this violent Method, which was intended to promote it. I ordered him to be immediately taken out of Bed, and not to be laid in it again, excepting a-nights, till after the ſixth Day: I, alſo, preſcribed half an Ounce of *Diacodium* to be taken directly, which proving ineffectual, I ordered the ſame Doſe to be repeated an Hour after, but unſucceſsfully; for the Blood was ſo violently agitated, that it could not be quieted before he had taken two Ounces and an half; but ſuch a Space was interpoſed between every Doſe, that I might be certain what Effect the laſt had. Afterwards, I preſcribed only half an Ounce, to be given every Night at Bed-time, to the End of the Diſeaſe; which proved ſufficient to preſerve the Calm, that had already been obtained, by a more frequent Uſe of it; and thus the Patient recovered.

If the Heat and Motion of the Blood and Spirits be extremely violent in the Beginning, an Opiate, though given in the largeſt Doſe, and frequently repeated, will ſcarcely avail, unleſs the Patient quits his Bed; for the Warmth of the Bed increaſes the Heat of the Diſeaſe, ſo as to render it neceſſary to exhibit the Opiate in a larger Doſe, than, perhaps, Nature is able to bear.

I would have this Remedy firſt exhibited in the Evening, when the Patient is wholly confined to his Bed, that is, the ſixth from the Beginning of the Illneſs; and repeated afterwards, every Evening, till the ſeventeenth Day, or at leaſt till the Danger be over. For on the ſixth Day the fleſhy Parts are inflamed; whence the Head begins to be diſturbed by the Humours, which are, alſo, inflamed from this Cauſe.

But great Care muſt be had to give the Opiate earlier in this, than in other Diſeaſes; becauſe a kind of Fit of Heat, and Reſtleſsneſs, always comes on towards Evening; at ſome times it happens, unleſs the Opiate be given early at the Decline of the Diſeaſe, that the Patient, becoming ſuddenly ſomewhat heavier, immediately grows hot, and afterwards complains of Sickneſs, which ſoon terminates in Death, to the Aſtoniſhment, and contrary to the Expectation of his Friends, who, a little before, conceived great Hopes of his Recovery; and his Death might, perhaps, have been prevented by giving an Opiate directly. On theſe Days, therefore, but eſpecially on the eleventh Day, I order the Opiate to be given earlier, as at five or ſix o' Clock in the Afternoon; and a ſecond Doſe to be kept in Readineſs, leſt Sickneſs ſhould come on ſuddenly.

Since, therefore, it is ſo dangerous, either to omit giving an Opiate ſoon enough, or on the other hand, to give it ſo early, that its quieting Virtue be ſpent before the Time comes for repeating it; it is faireſt, in this Uncertainty, to order an Opiate to be taken at a ſet Hour, every Morning and Night, at the Declenſion of the Diſeaſe, when there is moſt Danger. Nor is an Ounce of Diacodium always a ſufficient Doſe at theſe times; for this Quantity avails no more in a violent Inflammation of the Blood, and a very tumultuary Motion of the animal Spirits, than half an Ounce in a milder Diſeaſe. For I have learnt

from repeated Experience, that an Ounce and half is required in the young and ſanguine, to mitigate the Violence of the Symptoms wherewith they are ſeized; and in ſuch Subjects, this Doſe may be repeated with Safety and great Advantage, at ſuch times, Morning and Night, till the Patient recovers.

Sometimes, alſo, I have found it neceſſary at the Decline of a bad Species of the confluent Small Pox, to exhibit an Opiate thrice in twenty-four Hours, that is, every eighth Hour, on account of the violent Motion, or Diſturbance of the Spirits, occaſioning ſome Sickneſs. But it is to be obſerved, that if the exhibiting Diacodium ſo frequently be nauſeous to the Patient, which often happens on the above-mentioned Days, Liquid Laudanum muſt be preſcribed inſtead of it; ſixteen Drops of which are equivalent to an Ounce of *Diacodium*.

I am well aware, that it will be objected by thoſe of a different Opinion, that the peccant Matter will be fixed, and the Salivation diminiſhed, by repeating the Opiate ſo often, and in ſo large a Doſe. But though the Ptyaliſm will indeed be in ſome meaſure abated, it will not, however, ceaſe ſo entirely, as not to riſe again in ſome Degree, after the Opiate has been taken a conſiderable time, and its Virtue is nearly ſpent. Beſides, the Patient, being ſtrengthened by the Opiate, will be better able to expectorate the Phlegm; and the Saliva, though leſs copious, will be better concocted; and the Want of Sputation is abundantly ſupplied by the Swelling of the Hands and Face, which happens more certainly, and riſes higher, from the repeated Uſe of the Opiate, on thoſe Days wherein theſe Parts uſually ſwell, that is, the Face from the eighth to the eleventh Day, when it commonly begins to fall; but the Hands from the eleventh Day, till the Puſtules upon theſe Parts be entirely ripe; and the Want of either of theſe Swellings, when they ought to appear, threatens more Danger than the Stoppage of the Salivation.

But I would not be underſtood to adviſe the daily Uſe of Diacodium, though in a ſuitable Doſe, in young Children afflicted with the confluent Small Pox, unleſs the Caſe appear very dangerous; becauſe Children are not ſo hot as Perſons in the Prime of Life; and their tender Age is leſs able to bear the continued Uſe of Opiates. Beſides Children, thus affected, ſleep moſt Part of the Time ſpontaneouſly, and are conſequently leſs ſenſible of the Tediouſneſs of the Diſeaſe. Yet when the Eruptions are of a bad Kind, or when they become delirious, Opiates are always indicated; theſe being certain Signs of the irregular Motion of the Blood, and animal Spirits.

The Method of preventing the over-haſty Aſſimilation of the variolous Matter, at the Beginning of the Diſeaſe, and the Manner of checking the inordinate Motion of the Spirits, ariſing from the Inflammation of the external Parts, are the two Points wherein the Cure of this Diſeaſe conſiſts; as the ill Accidents which ſucceed for want of preventing theſe two Dangers, ſufficiently occaſion thoſe fatal Symptoms, which deſtroy the Patient.

If there be Occaſion for a Bliſter, it ſhould be made very large, and ſufficiently ſharp, and applied to the Neck; but neither too early, that it may not ceaſe running before the eleventh Day, which is attended with moſt Danger; nor deferred to that Day, ſo as to prove prejudicial at this time, from being laid on too late, by increaſing the Heat of the Blood, which is then ſcarce able to ſtruggle with the ſecondary Fever. The fitteſt Time, therefore, to apply a Bliſter, is the Evening preceding the great *Criſis* of the Diſeaſe, preſently after the Opiate which is to be taken at this time. For, if it be applied now, the Pain it cauſes will go off before the critical Day; and there will then be a Diſcharge of the peccant Matter, which is neceſſary to conquer the violent Symptoms happening on this Day. For now the Swelling of the Face firſt begins to ſink, and the Salivation, which had hitherto been copious, to abate; the Humour which occaſioned it being thickened, and, with Difficulty, raiſed. Beſides, the Bliſter ſupplies, in ſome meaſure, the Sinking of the Swelling of the Face, and the Abatement of the Salivation; and, likewiſe, contributes ſomewhat to check the ſecondary Fever, which is then very high, the Blood being in a manner oppreſſed, and totally infected, with the Abundance of *Pus* abſorbed from ſuch a Multitude of little Impoſthumes; ſo that, in moſt of the Patients I have treated in this Diſeaſe, I have obſerved, that the Pulſe in the Wriſt could ſcarce be felt at this time, though it was eaſily felt the preceding, and following Day.

But, among all the Remedies that occaſion a Derivation, or Revulſion, from the Head, none, in my Opinion, ſeems to operate ſo efficaciouſly as Garlick applied to the Soles of the Feet. The Revulſion it occaſions is evident, by the Bliſters it frequently raiſes, and the intolerable Pain it ſometimes, though rarely, cauſes, by inviting the Humours to thoſe Parts, even without raiſing Bliſters; ſo that, to eaſe it, I have found it neceſſary to order a Cataplaſm, made of the Crumbs of white Bread, boiled in Milk, to be applied to the Part. In Adults, therefore, afflicted with the confluent Small Pox, I uſually apply Garlick ſliced, and included in Linen, to the Soles of the Feet, from the eighth Day, when the Face firſt begins to ſwell; and renew the Application every Day till the Danger be paſt.

I muſt further obſerve, that the Patient muſt be kept from Fleſh throughout the Courſe of the Diſeaſe, and only allowed Small Beer for his common Drink. In the mean time, it will be convenient for him to live on Water-gruel, roaſted Apples, and the like. But, upon the Approach of the Suppuration, when the purulent Particles return into the Blood, and taint the Maſs, it will be proper to give a few Spoonfuls of Wine every Morning and Night. As to the Coverings of the Bed, they are to be entirely the ſame he made uſe of in Health; and he is to be permitted to turn himſelf in Bed as he pleaſes, for the Reaſons already given.

I will ſubjoin a Caſe, as a Specimen of this whole Procedure: I was called this Winter, to attend a Gentleman of a very ſanguine Conſtitution, and in the Prime of Life. The Day before I came, he was ſeized with an high Fever, vomited a conſiderable Quantity of bilious Matter, and had a violent Pain in his Back. In order to mitigate theſe Symptoms, he went to Bed, and, by heaping on Cloaths, and taking hot Liquors, ſpent a Day to no Purpoſe in endeavouring to force Sweat; the great Tendency to vomiting, and the Purging, though moderate, rendering the Sudorifics ineffectual, and, in the mean time, increaſing the Fever. I ſuſpected the Small Pox would ſhortly appear, and, alſo, prove very confluent, both on account of his Youth, and the great Inflammation raiſed in his Blood by the fruitleſs Attempt to procure Sweat, which, if the Diſeaſe had happened in the Summer, would certainly have occaſioned bloody Urine, and purple Spots; but chiefly becauſe I have always obſerved, that in young Perſons attacked with exceſſive Vomiting, Sickneſs, and extraordinary Pain, the ſucceeding Small Pox proved highly confluent. For this Reaſon, judging it requiſite to uſe all Endeavours to prevent the too haſty Aſſimilation of the variolous Matter, I kept him up till his uſual time of going to Bed; and the next Day in the Morning, which was the third, the Small Pox not appearing, I directed eight Ounces of Blood to be taken away from the Right Arm. The Blood was good and florid, having as yet only received the ſpirituous Miaſma, and not that Putrefaction occaſioned by a longer Continuance of the Diſeaſe. The ſame Day at five in the Afternoon, I exhibited an Ounce of the Infuſion of *Crocus Metallorum*, which operated well, carrying off his Sickneſs, ſo that he ſeemed much better, and willingly refrained from Bed, which he did not care to quit before, by reaſon of his great Sickneſs and Giddineſs. On the fourth Day in the Morning, I found the Eruptions coming out ſo copiouſly, notwithſtanding the Endeavours I had uſed to prevent it, that they threatened the utmoſt Danger; I was therefore very cautious to keep him up in the Day-time; and adviſed the drinking of Small Beer acidulated with Spirit of Vitriol. This Advice he followed to the ſixth Day, when, though he was not ſick, but much refreſhed by the Air, yet his Belly was ſoluble between whiles; towards Night he was obliged to go to Bed, which is common in this Caſe; and therefore he continued therein, by my Conſent, during the whole Courſe of the Diſeaſe, the Eruption being now over. Though the Puſtules were fewer than I have obſerved in ſome that died of this Diſeaſe, yet they were more numerous than they generally are in moſt that recover. I firſt exhibited this Evening, an Ounce of *Diacodium*, in Cowſlip-flower-water, and directed it to be repeated every Night: I likewiſe adviſed, that he ſhould have no more Cloaths laid on him, than he was accuſtomed to in Health; and preſcribed for his Diet, Water-gruel, Barley-broth, and ſometimes a roaſted Apple; and, for his Drink, Small Beer. On the eighth Day I ordered ſliced Garlick, folded in Linen, to be applied to the Soles of the Feet, and renewed every Day, till the Danger was paſt. After this, the Puſtules ripened kindly to the tenth Day, when, viſiting him in the Morning, though I found him in a fair way, yet I perceived ſome Signs of the ſecondary Fever, along with ſome kind of Reſtleſneſs. Apprehending, therefore, the approaching Danger, I immediately exhibited the Opiate above-mentioned, which quieted all the Symptoms; and the ſame Evening I preſcribed an Ounce and half of Diacodium. The next Morning, which was the eleventh Day, (the Virtue of the Opiate, he had taken the Night before, being ſpent) he began to grow reſtleſs again; whereupon I gave him the ſame Quantity immediately, and repeated it in the Evening, and ordered it to be continued Morning and Night, till he was perfectly recovered. The Patient complied, and no dangerous Symptom afterwards appeared, except a Suppreſſion of Urine ſometimes, which frequently attacks young Perſons in this Diſeaſe; but he, however, made Water kneeling in Bed. With regard to the Salivation, though it was checked, in ſome meaſure, by the frequent Repetition of Opiates in ſo large a Doſe, yet at diſtant Intervals, from the Uſe

of them, he expectorated concocted Phlegm, and his Face and Hands ſwelled ſufficiently at the proper time. On the eighteenth Day he roſe from Bed, and then I firſt allowed him to ſup ſome Chicken-broth; and afterwards he returned by Degrees to his uſual manner of Living. On the twenty-firſt Day, eight Ounces of Blood were taken away from his Arm, which reſembled pleuritic Blood, and differed little from *Pus*. Laſtly, he was purged four times at proper Intervals.

It is here to be noted, that as often as the Day, from the Beginning of the Illneſs, is here mentioned, for Inſtance, the ſixth, the eleventh, and the like, I would not be underſtood to inſinuate, that the confluent Small Pox always comes out on the third Day; becauſe I am well aware, that ſometimes, even in the worſt Species, the Puſtules do not appear till after the third Day. But in general the Eruption happens on the third Day, incluſive, from the Beginning of the Diſeaſe. Thus a Perſon who is ſeized with the confluent Small Pox on *Monday*, will find the Puſtules appear on the *Wedneſday* following; and the ſecond *Thurſday* after the firſt *Monday*, will be the eleventh Day, *which is full of Danger, unleſs the Phyſician prevents it.* And I repeat it once more, that theſe Obſervations relate only to the confluent Small Pox.

The ſame illuſtrious Author, in another Diſſertation, gives us ſome further Remarks on the putrid, or ſecondary Fever, happening in the Small Pox, to the following Effect:

I have already ſhewn wherein the great Difference conſiſts between the diſtinct and confluent Small Pox; that the diſtinct Kind is ſo void of Danger, as to ſtand in need of very little Aſſiſtance from Medicine, unleſs the Patient happens to promote Sweat in the Beginning, by lying always in Bed. But the youthful Part of Mankind chiefly periſh by the confluent Small Pox, when the Patient, who before ſeemed to be in no great Danger, is often ſeized on the eleventh Day, or one of the other dangerous Days already mentioned, with an high Fever, very difficult Reſpiration, and great Reſtleſneſs, which ſuddenly put an End to his Life, to the Aſtoniſhment of his Friends, who, till this fatal Period, had Hopes of his Recovery. In this Caſe it ought to be conſidered, that this adventitious Fever, which happens in the confluent Small Pox, is a Diſtemper entirely different from the Small Pox, and that Fever, which either precedes the Eruption, or ariſes ſometimes from the Inflammation of the Puſtules at the Beginning: For, properly ſpeaking, it is only a putrid Fever, proceeding from the Tranſmiſſion of the putrid Particles of the Puſtules, now in a State of Suppuration, into the Blood; which, being prejudicial to Nature, at the ſame time infect the Patient, and occaſion a very malignant Fever.

Thoſe, then, are the only proper Remedies, which will moſt effectually check this ſecondary, or putrid Fever; and nothing anſwers this Intention better, than plentiful Bleeding, which clears the Blood of the morbific Particles which nouriſh the Diſeaſe. Nor is this Practice, in my Opinion, in the leaſt contra-indicated by the Diſtemper, conſidering the preſent State of the Eruptions, ſince, if the Patient ſhould die at this Period, and be interred, yet the Eruptions, being cruſted, could not recede, nor grow leſs. And, in Effect, we have nothing to do now with the Small Pox, but with the putrid Fever, which is a very different Diſeaſe.

When, therefore, the Patient is threatened with immediate Death, from the uncommon Violence of the Symptoms, without ſpeedy Aſſiſtance, whether it be on the eleventh Day, or afterwards, I order ten or twelve Ounces of Blood to be immediately taken away from that Arm, which hath the feweſt Eruptions, as being the fitteſt for the Operation, for though Opiates, and refraining from Bed in the Day-time, may be ſufficient in the Beginning of the Diſeaſe without Bleeding, to conquer the Fit which comes moſtly towards Evening; yet on theſe Days of the ſecondary Fever, plentiful Bleeding alone can be ſafely depended on; this being the ſole Means of quieting the preſent Tumult. An Opiate is, therefore, to be exhibited in a large Doſe, in the Evening, as before; and it is to be repeated from this time, Morning and Night, and ſometimes oftener, as there is Occaſion: For it muſt be carefully noted, that the Symptoms in ſome Perſons are ſo extremely violent, that an Opiate given in a very large Quantity cannot overcome, nor even check them in leſs than twelve Hours; in which Caſe it is indiſpenſably neceſſary to repeat the Opiate in the ſame Doſe every ſix or eight Hours.

But, as it frequently happens in the Declenſion of the Diſtemper, partly from its Nature, and partly from the great Virtue of the Opiate, that the Patient becomes ſo very coſtive, as to be in Danger of Suffocation, and that the Fever riſes ſo high, as to leave little Hopes of Recovery, we muſt ſuit the Remedy to the preſent Exigency; and leſs Danger will enſue from taking a gentle Purge, than from the Fever much increaſed by the Retention of the Fæces. I have ſucceſsfully ordered here, an Ounce and half of lenitive Electuary to be diſſolved in four Ounces of ſome ſmall diſtilled Water, as of Succory, or Milk-water, and taken immediately; and, though this Draught may not operate ſpeedily, on account of the uſual Coſtiveneſs in this Diſeaſe, and, alſo, of the long-continued Uſe of Opiates, yet being adminiſtered in the Morning, it ordinarily gives a few Motions before Night; but, if it ſhould not, the Opiate muſt be exhibited in the Evening, and indeed earlier, notwithſtanding the Purge, if great Reſtleſsneſs, or Sickneſs, threaten Danger, leſt the Patient, for want of this Aſſiſtance, ſhould periſh, whilſt the Operation of the Medicine is waited for. Nor will ſo mild a Purge occaſion the leaſt Miſchief, though it ſhould not work at all; ſo that, if it does not anſwer the Intention the firſt Day, repeat it the next, which will ſeldom fail to work. But, if it ſhould ſeem to have procured a ſufficient Diſcharge for the preſent, and the Patient grows better, the ſecond Draught may be deferred to another time.

In this manner, Bleeding and Purging may be repeated by Intervals, as the Fever and Reſtleſneſs ſeem to require, till the Patient be out of Danger. But, let it be carefully remembered, *that a Purge is not to be exhibited till the Declenſion* of the Diſeaſe, that is, on the thirteenth, or ſubſequent Day; and not then, unleſs ſome Blood has been taken away upon the firſt Appearance of the ſecondary Fever.

Though purple Spots may be removed by duly cooling the Blood, yet both bloody Urine, and a violent Flux of Blood from the Lungs, ordinarily foreſhew certain Death: Nevertheleſs, this dreadful Difficulty may, likewiſe, be overcome, and Life preſerved. For as both theſe Symptoms proceed from the vehement Inflammation, and of courſe, the exceeding Thinneſs, or diſſolved State of the Blood, ſuch Medicines as cool, and, alſo, thicken the Blood, by their binding and incraſſating Quality, admirably check theſe Bleedings. For this Reaſon, after Bleeding once plentifully, give an Opiate.

Take of diſtilled Water of red Poppies, two Ounces; Liquid Laudanum, fourteen Drops; diſtilled Vinegar, three Drams; Diacodium, half an Ounce: Mix them together for a Draught.

Then, let the following, or the like Remedies, be uſed till the Bleeding ſtops.

Take of the Troches of *Lemnian* Earth, and *Armenian* Bole, each a Dram; Seal'd Earth, Blood-ſtone, Dragons-blood, and prepared red Coral, each half a Dram; Maſtich, and Gum Arabic, each a Scruple: Make them into a fine Powder; of which, let half a Dram be taken every three Hours, in a Spoonful of Syrup of Comfrey, drinking after it four or five Spoonfuls of the following Julap:

Take of the beſt diſtilled Waters of Plantain, and Oak-buds, each three Ounces; Cinnamon-water without Spirit, two Ounces; Syrup of dryed Roſes, an Ounce; Spirit of Vitriol, enough to give it a moderate Tartneſs: Mix the Whole for a Julap.

In the mean time the Opiate above preſcribed muſt be given in the Evening: Emulſions, alſo, made of the four greater cold Seeds, and white Poppy-ſeeds, are very beneficial. But, after the Bleeding is ſtopped, the Diſtemper is to be treated in all other reſpects, according to the Method above delivered.

When I order Liquid Laudanum, I mean my own Laudanum, which is prepared in the following ſimple manner:

Take of *Spaniſh* Wine, one Pint; Opium, two Ounces; Saffron, one Ounce; Cinnamon and Cloves, reduced to Powder, each one Dram: Infuſe them together in a Bath-heat for two or three Days, till the Tincture becomes of a due Conſiſtence; and, after ſtraining it off, ſet it by for Uſe.

I would have the Syrup of Poppies, or Diacodium, thus made:

Take of the Heads of the white Poppy, well dry'd, fourteen Ounces; let them infuſe for twenty-four Hours in a Gallon of Spring-water; then boil them well, and preſs out the Remainder ſtrongly; to which add, twenty-four Ounces of Sugar, and boil them together into a Syrup.

I eſteem theſe two Preparations the beſt of their Kind, eſpecially the *Diacodium*, an Ounce of which will do more Service, than two of that which is made with green Poppy-heads, (without preſſing the Liquor out ſo ſtrongly) and a large Quantity ſometimes of the black Heads of the wild Poppy, which have little Virtue. Accordingly, whenever I am not ſatisfied about the Strength of any of theſe Opiates, I uſually order, in their ſtead, a Grain and half, or two Grains, of

of ſolid *London Laudanum*, diſſolved in ſome proper diſtilled Water; by which means I avoid making any Miſtake, and injuring my Patient.

Helvetius, like other Authors, divides the Small Pox into diſtinct and confluent. Of the diſtinct Species he mentions two Sorts, the *ſimple*, and the *malignant*, which laſt, he again divides into two Species.

The confluent Small Pox he diſtinguiſhes into the *ſimple*, and the *malignant*; of which laſt he makes four Species.

The Simple Distinct.

The ſimple Diſtinct are diſtinguiſhed from the other by a Ceſſation of all the Symptoms after the Eruption. The Symptoms are, a briſk Fever, Drowſineſs, Deliriouſneſs, convulſive Motions, Head-ach, Pains about the Region of the Kidneys, a Propenſity to vomit, and Vomitings. In this Caſe the Patient muſt be blooded in the firſt place. *Helvetius* recommends Bleeding in the Foot, if the Phyſician is called in late. The Patient muſt, alſo, drink a large Quantity of a light Ptiſan; and muſt have an emollient Clyſter, made purgative, if occaſion requires. He muſt be ſupported with Broths made of Veal and Fowls.

When the Violence of the Fever is a little over, he muſt take a Vomit, and be gently purged in caſe the Vomit do not work downwards. Nor need one to fear to purge the firſt or ſecond Day, in caſe the Symptoms require it.

The Patient's Regimen, after the Eruption, muſt be of Broths ſomewhat ſtronger, to which Beef may be added with Rice. He muſt, alſo, take twice or thrice a Day an abſorbent Potion, compoſed of ſimple Water, and ſome teſtaceous Powders, as Powder of Coral, Crabs-eyes, prepared Pearls, Species Confectionis Hyacinthinæ, the Counteſs of *Kent*'s Powder, and diaphoretic Antimony. In Children ſubject to Worms or Convulſions, or in caſe their Stools are greeniſh or ſlimy, the *Pulvis ad Guttetam*, Oyſter-ſhells, and calcined Egg-ſhells, are preferable to thoſe above-named.

If the Pock does not riſe, and the Circle at the Baſe becomes pale, the Patient ſhould take a larger Doſe of diaphoretic Antimony, or the Counteſs of *Kent*'s Powder; or with an Addition of Saffron, or Theriaca. In caſe the Belly is not relaxed, he muſt take a Clyſter, eſpecially if an Adult, as he may a gentle Narcotic, in caſe of Want of Sleep, proceeding from Pain and Uneaſineſs cauſed by the Pock. Theſe Narcotics ſhould be mixed with ſome Abſorbent, in order to hinder them from growing ſour on the Stomach. Whilſt the Puſtules ſuppurate, he muſt not drink ſuch large Quantities of Broths as before; but plentifully of ſome light Ptiſan, with ſome proper Apozem. When the Suppuration is over, he may come to a ſtronger Regimen, but continue his Ptiſan, and take a Clyſter every Day. As ſoon as ever the Pock falls off, the Patient muſt be purged, which muſt be often repeated to hinder ill Conſequences.

The Distinct Malignant.

In the *Diſtinct malignant*, the Patient has a burning and continued Fever; a great Oppreſſion; a dry and burning Skin; a conſiderable Pulſation in the Carotid Arteries; a Stiffneſs of the Tendons; the Eyes animated and ſparkling; and the Veſſels of the *Tunica Conjunctiva* red and diſtended; a conſiderable Pain in the Small of the Back and Head, oftenеſt without Deliriouſneſs, and without Heavineſs or Inclination to ſleep. Theſe are the Symptoms before the Eruption. Theſe Symptoms generally ceaſe after the Eruption; but the Fever ſoon after returns, and brings on frightful Dreams, Deliriouſneſs, Inquietudes, Bleeding at the Noſe, more particularly at the Increaſe of the Fever, often profuſe Sweats, notwithſtanding which, the Skin remains burning, and dry.

Frequently upon the Skin, between the Interſtices of the Pocks, red Spots appear, which make a ſort of univerſal Inflammation.

The Fever, and other Symptoms, increaſe at the Suppuration, as, great Agitations, violent Deliriouſneſs, and convulſive Motions; notwithſtanding which, the Pock remains elevated, and of a good Kind. As the principal Danger in the Small Pox is the inflammatory Fever, ſo the greateſt Care ought to be taken to diminiſh this, eſpecially at the Suppuration, when there is the moſt Danger, the Symptoms then increaſing conſiderably. For anſwering this Intention, the Phyſician muſt order the Patient to be blooded in the Arm, if he is ſent for before the Eruption, or when the Eruption is but juſt begun. But in caſe he is called in too late, he muſt not neglect Veneſection immediately in the Foot. For this Species of Evacuation, beſides the Advantage common to it, and Veneſection in the Arm, which is diminiſhing the Quantity of the Blood, is excellently calculated for making a Revulſion, and by that means keeping the Brain, and Parts adjacent, free from Inflammation. But Bleeding in the Foot is never ſo effectual, unleſs the Blood-veſſels of the Body are firſt ſufficiently emptied. Mean while, Care muſt be taken to dilute the Humours, by a plentiful drinking ſome proper Ptiſan, and diluting Apozem, every third Hour, and to eaſe the Inteſtines by ſome proper Clyſter. But the principal Care muſt be to obſerve the Diminution of the Fever, and then exhibit a Purge, and, alſo, a Vomit. *Helvetius* prefers ſoluble Salt of Antimony; but the Emetic muſt not be given till the Veſſels are emptied enough; afterwards, if the Evacuation is not large enough, a Purge muſt be given; after which, ſome abſorbent Draughts every third Hour. If more Evacuation is required, a Purge, Vomit, or both, may be repeated, to hinder Returns of the Fever, colliquative Sweats, Hæmorrhages, Suppreſſion of Urine, *&c.* *Helvetius* orders a febrifuge Ptiſan of the *Peruvian* Bark, with the Leaves of Borrage and Bugloſs; but never when the Skin is burning, and the Tongue dry, nor continued paſt the fouth Day. Sometimes the Patient muſt be blooded twice or thrice in one Day, and be purged the next; and even ſometimes take a Vomit, or a Purge, ſome few Hours after the laſt Bleeding, according as the Symptoms are violent, the Quickneſs of their Increaſe, the Ardour of the Fever, and the quick Returns of it; ſo that there is but little Interval between. If all this ſhould have been neglected at firſt, before the Eruption, they muſt be put in Practice the three firſt Days of the Eruption. And though the Effects are more uncertain in this latter Caſe, yet all the Ill that happens from it is, that the Circles are paler, and the Eruption more ſlow. A gentle ſlow Eruption is better than a precipitated one. When the Symptoms do not demand the Ptiſan of the Bark, the principal Care muſt be to dilute the Blood, and evacuate its Salts by the urinary Paſſages, to keep up a free Tranſpiration, and to keep the Inteſtines relaxed. *Helvetius* recommends diaphoretic Antimony for this Purpoſe, and ſays, he uſes it in the *diſtinct ſimple* Small Pox, when, being called in too late to purge, he obſerves any Symptom, which ought to determine him to purge. In caſe diluting Apozems do not keep the Inteſtines relaxed enough, Clyſters muſt be uſed; or two, three, or four Grains of ſoluble Salt of Antimony, diſſolved in four Doſes of the Apozem, which he recommends, and ſays, it may be uſed from the Eruption to the Suppuration, the Fever of which it diminiſhes. If a Looſeneſs happens after the Eruption, and immediately before the Suppuration, or whilſt it laſt, if the Stools are crude, ſerous, and greeniſh, they muſt be corrected by Abſorbents. In caſe the Looſeneſs appears crude and ſerous before, or at the Beginning of the Eruption, Abſorbents muſt be deferred till after ſome proper Cathartic. But, if the Looſeneſs is bilious, and of a good Kind; if it do not ſtop the Eruption, or the Fever do not increaſe, it is very ſalutary, though it happens at the time of Suppuration: And ſhould it ceaſe too ſuddenly, it muſt be provoked again. But if the Evacuations are too large, they may be moderated. *Helvetius* thinks Clyſters very proper thro' the whole Courſe of the Diſeaſe, if the Patient has his Belly ſwelled, if he finds a Working of his Inteſtines, and Uneaſineſs. The Patient ought, alſo, to drink a large Quantity of Liquors. In caſe of Watchings and Inquietudes, a gentle Narcotic may be uſed, provided that there are no conſiderable Complaints of the Head, no Deliriums, Convulſions, Giddineſs, nor Heavineſs; provided, alſo, that the Watchings, *&c.* are not cauſed by the Violence of the Fever: In which Caſe only, Syrup of white Water-lily ſhould be tried. But in caſe they are ſo violent as to oblige to have recourſe to a Narcotic, *Sydenham*'s Liquid Laudanum, or ſome other Compoſition charged with Aromatics, which correct the Opium: For *Helvetius* has often remarked, that Opium, or the *Syrupus è Meconio*, by themſelves, have often cauſed troubleſome Drowſineſs, and increaſed the Delirium.

At the Suppuration the diaphoretic Antimony muſt be left off, and the Apozem taken alone, or with ſome teſtaceous Powder, and diluting Liquors muſt be drank in great Plenty; the Broths the ſame as preſcrib'd before. When theſe Deliria, Convulſions, *&c.* grow violent, they are mortal. In caſe an Epiſpaſtic can be applied twelve or fourteen Hours before theſe Symptoms are grown conſiderable, it is the beſt thing that can be applied, both to ſtop and prevent the ill Conſequences. In caſe the Fever returns, after the Suppuration is ended, Emetics and Cathartics ſucceed beſt; if the Pus is too thin, and hinders the Suppuration, the Pocks muſt all be cut, and, mean while, Cathartics and Lenients muſt be uſed.

The ſecond Sort of the *diſtinct Malignant* is, when there is a ſtrong Fever with Purples, and a Multitude of little Veſicles, fill'd with a limpid Serum, more particularly on the Breaſt, and very few Pocks: This muſt be treated after the manner of *malignant* Fevers.

The Confluent Simple.

In the *confluent Simple* the Fever ceaſes, for the moſt part, after the Eruption, but returns violently at the time of Suppuration;

ration, and ſometimes with an Inflammation. Though it is difficult to tell if the Lymphatics have been obſtructed from the Beginning, or not; the following are, however, Signs of it, eſpecially if they all, or moſt part of them, appear at once, though ſome ſeparately may appear without any Obſtruction.

If the Patient was not blooded at firſt, and has taken ſtrong Cordials.

If he is too drowſy after the Eruption.

If he feels a continual Humming, and Noiſe, in his Ears.

If, during his Drowſineſs, he has ſlight and frequent Wanderings.

If he is uneaſy, and toſſes about.

If his Belly remains puffed, and ſwelled, although it has been evacuated by Clyſters.

If the Tongue is very dry.

If his Urine is made in a ſmall Quantity, and that high-colour'd.

If the Pock is flat, and ſunk in the Centre.

Though there is no Reaſon to ſuſpect any Obſtruction from the Beginning, yet there is great Danger at the Suppuration; and the only Reaſon one can have to hope for Recovery, is, the Management of the Patient from the Beginning. Convulſions and Raving are very bad Accidents; and, if they come on a ſudden, at the latter End of the Suppuration, and after proper Evacuations by Bleeding and Cathartics, they almoſt always prognoſticate a near and inevitable Death: But if proper Evacuants have not been us'd, they are leſs dangerous, there being a Poſſibility of preventing the ill Conſequences by Bleeding, Cathartics, *&c.*

This Sort of Small Pox is not near ſo terrible as the *diſtinct malignant:* It is, however, very dangerous, about the Time of Suppuration. When the Patient is firſt ſeiz'd, he muſt be blooded in the Arm, once or twice, if he is paſt Twenty, and of a ſanguine Conſtitution; and afterwards muſt be blooded in the Foot.

Afterwards, Cathartics and Emetics muſt be us'd, but with this Precaution, that as there is not now, as in thoſe of the *malignant* Kind, any Fever independent and diſtinct from the Small Pox to combat, for that Reaſon the Evacuations muſt be leſs: After proper Evacuations, the three principal Views muſt be, to dilute the Blood; to promote a large Quantity of Urine; to attenuate the Bile, and make it fit for Secretion: For no Part of the Body is ſo ſubject to be diſorder'd in this Sort of Small Pox, as the Glands of the Liver, which often cauſes irregular Fits of a Fever, Hæmorrhages, Vomiting, Weakneſſes, *&c.* To ſatisfy theſe Intentions, the Patient muſt take fifteen or twenty Grains of diaphoretic Antimony, and half a Grain of ſoluble ſtibiated Salt, in four Ounces of ſome proper diluting Apozem. When the Suppuration begins, the diaphoretic Antimony and Salt muſt be diſcontinued, and the Apozem given alone, or with ſome ſimple teſtaceous Powders.

It ſometimes happens, that, at the firſt Days of the Eruption, the Pock is not elevated as it ought, but is ſunk at the Centre: In this Caſe, the diaphoretic Antimony muſt be us'd without the ſoluble ſtibiated Salt; and, if that is not ſufficient, ſome Kermes Mineral, the Counteſs of *Kent*'s Powder, or the Species for the Confection of Hyacinth, may be join'd to it. If the Urine is thick, of an ardent or deep-colour'd Yellow; one muſt have recourſe to *Glauber*'s *Sal Mirabile:* Clyſters are, alſo, very uſeful: The Regimen muſt, alſo, tend to dilute and ſweeten the Blood. Often, at the End of the Suppuration, arrive, a briſk Fever, Hæmorrhages, Convulſions, a profound Heavineſs, Weakneſſes, or Syncopes, and Inclination to vomit: In this Caſe, if the Patient has not had neceſſary Evacuations, and theſe Symptoms have not yet appear'd in the Courſe of the Diſeaſe, he muſt be immediately blooded in the Foot, even though the Pock is ſtill ſuppurating. In caſe the Symptoms require it, it may be ſafely repeated, uſing, at the ſame time, diluting Apozems.

When theſe Symptoms are preceded by a diſtinct Fit of Shivering, a Ptiſan, of the *Peruvian* Bark, muſt be us'd; but after Bleeding, and when the Fit is conſiderably diminiſh'd. In caſe the Patient has a Propenſion to vomit, or Weakneſs, Eructation, or a ſwell'd Stomach, he muſt take a Vomit after Bleeding; but not unleſs the Diminution of the Fever, and the End of the Fit, permit.

On the contrary, if the Symptoms have been eas'd by Bleeding and Diluters, the Patient muſt wait for his Cathartics and Emetics, till the Suppuration is entirely ended.

Sometimes theſe Accidents do not appear, till the Pock is dry'd, and the Suppuration ended: To avoid a Return of the Fever, the Patient muſt be purged, or vomited, immediately after Bleeding: This Practice has always ſucceeded perfectly well with *Helvetius*.

But if theſe Symptoms appear'd at firſt, or in the Courſe of the Diſtemper, one can expect no Succeſs from theſe Methods, but muſt have recourſe to Veſicatories, the only Remedy that can be of Service; which will not avail, unleſs applied, at leaſt, twelve or fourteen Hours before the Symptoms are at their Height. Bleeding, after the Suppuration, ſucceeds, in this Sort, oftener than in the *malignant* ones.

The Confluent Malignant, called Cryſtalline.

All the four Sorts of the *confluent malignant* Small Pox have this common Symptom; the Fever never ceaſes throughout the whole Courſe of the Diſtemper: The firſt Sort is diſtinguiſh'd by the Pocks, which are clear, tranſparent, and full of a limpid Seroſity; wherefore they are call'd *cryſtalline*.

Though it is difficult to diſtinguiſh this Sort at firſt, yet it may be gueſs'd at, by a briſk Fever, a conſiderable ſerous Looſeneſs, a great Headach, and great Thirſt; the Skin of a white pale, and all the Parts a little ſwell'd: At the Eruption, the Pock appears of a paler red, riſes ſooner, and higher, and becomes larger than in the other Sorts; the Circle at the Baſe remains always paler; the Pellicle, which contains the Humour, is very thin; often many Grains join, and form a Sort of Bladder full of Seroſity, which, if pierced, and the Liquor let out, looks pale at Bottom: All the Parts, in general, have an extraordinary œdematous Swelling; and, at laſt, the *malignant* Fever manifeſts itſelf, by Symptoms proper to it, or a miliary Eryſipelas. As the Blood, in this Sort of Small Pox, is too fluid, there is no Occaſion to bleed ſo much as in the other Sorts: But as the Head is always diſorder'd, there is a Neceſſity for bleeding in the Foot, which has ſeldom Occaſion to be repeated. One of the principal Accidents is, a Flux of a crude, ſerous Matter, of a green or whitiſh Colour; in which Caſe the Patient muſt be gently vomited. *Helvetius* recommends one Ounce of the Magiſterial Syrup, and ten or twelve Grains of Ipecacuanha, mix'd up with ſome ſpirituous Cordial; after which, ſome Bolus, of the teſtaceous Powders, muſt be given: The next Day, or Day after, ſome gentle and aſtringent Cathartic; after that, a Draught, with ſome teſtaceous Powders, or very gentle Aſtringents, and in a ſmall Quantity; for the Flux muſt be moderated only, not ſtopt; inſomuch, that, in caſe it ſhould ſtop, or diminiſh ſo much that the Belly becomes ſwell'd, it muſt be promoted by proper Clyſters. If there is any Occaſion for Narcotics, only the *Syrupus de Nymphæa* muſt be us'd.

In caſe the Fever and Looſeneſs return towards the End of the Suppuration, (for during the time of Suppuration the aforeſaid Conduct muſt be obſerv'd) proper Cathartics muſt be us'd, but defer'd longer than in the other Sorts; becauſe the Humour ſuppurates ſlower: When the Suppuration is entirely ended, the Pus ſhould be let out of the Pock all over the Body, the Face excepted. During the whole Courſe of this Diſtemper, as the greateſt Danger proceeds from a total Diſſolution of the Juices, ſo the Deſign ought to be, to give them a Conſiſtence. The Patient ſhould never take, at the ſame time, Emulſions, or milky Liquors, and Acids; nor Acids, and teſtaceous Abſorbents.

The ſecond Sort of the Confluent Malignant.

The Accidents that appear before the ſecond Sort of the *confluent malignant*, are much the ſame as thoſe preceding the firſt Sort of the *diſtinct malignant*; but the Fever is generally briſker, and the Returns of it longer, and more violent; but it is not always attended with Vomitings, or a Propenſity thereto, with Drowſineſs, Wanderings, and other terrible Symptoms. The principal of the Symptoms are, a Beating of the Carotid Arteries, a Redneſs of the Eyes, and Stiffneſs of the Tendons.

The Eruption is often ſudden, the Figure of the Pocks more irregular than in the other Sorts, are flat in the middle, and have their Circles of a deep Red: They riſe but indifferently, eſpecially on the Face, which puffs and ſwells from the very firſt Day of the Eruption; the Cuticle of the Face riſes, and appears all one Pock, flat, and of an even Surface. If there is any Interval betwixt the Pocks, it is mark'd with eryſipelatous, and, often, purple Spots; the Skin is dry, and very burning; ſometimes there are abundant Sweats, though the Skin remains ſtill very hot; the Urine is in a very ſmall Quantity, and of a high-colour'd Yellow; the Pulſe is either hard and ſmall, or very large, and very much elevated; the Eyes ſometimes are red, ſparkling, and incapable of ſuffering the Light, ſometimes very heavy, and the Pupil dilated more than uſual: The Patient has violent Headachs, eſpecially if he has neither Drowſineſs nor Wanderings: Inflexibility of the Tendons, convulſive Motions, and Deliria, are more frequent, and conſiderable, than in the other Sorts; the Patient, in this, muſt be blooded, and purged, as ſoon as poſſible: If, after a ſufficient Evacuation, the Fever remains ſtill very ſtrong and ardent, diluting Apozems muſt be given alone; if it remains briſk, but leſs violent, with diaphoretic Antimony, and ſoluble ſtibiated Salt; but

if the Fever is but moderate, and the Pock remain ſunk in the Centre, half a Grain or a Grain of Kermes Mineral muſt be given, inſtead of the Salt. If the Inteſtines are too much relax'd, ſome of the Species of the Confection of Hyacinth, or Confection of Kermes, muſt be added to the Apozem; or the Powders may be taken ſeparately, drinking a Glaſs of Ptiſan after it, in caſe there appears any Danger of too great a Relaxation of the Inteſtines. If, at the Suppuration, the Accidents return, notwithſtanding all theſe Precautions, the Effects of Bleeding and Cathartics would then be fatal; the only Things that can be of Service, are Veſicatories.

About the End of Autumn, in the Year 1719, a Small Pox, of the *confluent* and *malignant* Kind, appear'd at *Paris*, and raged with ſuch Violence, that no Remedies could afford Relief to thoſe who labour'd under it: The Symptoms could not be hinder'd, either from appearing, or returning again in the very Beginning of the Suppuration; and though the Suppuration does not generally begin till the fifth, or End of the fourth Day, in this Species it often began on the End of the third. Nothing was capable of ſtopping the rapid Courſe of the Symptoms, and few Patients were ſo happy as to eſcape their Violence, in whatever Method they were treated, but generally died on the fifth or ſeventh Day of the Eruption, and, ſometimes, at the Beginning of the Suppuration. The only Difference we could then obſerve, was, that thoſe who were blooded and purged in the Beginning, were more calm, and leſs agitated, during the firſt Days of the Diſorder: But this was a fallacious Reſpite, always ſucceeded by fatal Conſequences, and only capable of impoſing on thoſe who had not had an Opportunity of obſerving a great Number of ſuch Patients. The Pain, and other Symptoms, were leſs violent, but the Death of the Patient was not leſs certain.

In reflecting upon the Cauſes of this terrible Diſorder, I imagin'd, that the exceſſive Heat and Drought, which had laſted, without Interruption, from the middle of the Spring, had induced a Change in the Blood, by depriving it of its moſt ſerous Parts; a Misfortune which may eaſily happen in *France*, where the Inhabitants generally neglect to defend themſelves from the Heat of the Sun, and to correct their Blood by proper Aliments.

The Characters and Obſtinacy of ſome other Diſeaſes, which then raged, made us conjecture, that all the Fluids of the Body, and eſpecially the Lymph, were much inſpiſſated, and wanted a ſufficient Quantity of that aqueous Vehicle which is ſo neceſſary for their free Circulation: We, alſo, obſerv'd, that, in this Pock, of the *confluent* and *malignant* Kind, the Spit diſcharg'd during the Ptyaliſm was more thick and viſcid, than at other Times. The Neck, the Face, the Hands and Arms of the Patients, were violently inflated, and far more firm and hard than they uſually are on the like Occaſions. When the Inflation was arriv'd at its greateſt Height, and the Fever of the Suppuration begun, the Spots diſappear'd gradually more and more, till, at laſt, nothing at all was expectorated; a Symptom which always prognoſticates a ſpeedy Death. Theſe Obſervations laid a Foundation for our ſuſpecting,

1. That Symptoms, ſo terrible and frequent, depended on the Inſpiſſation of the Lymph; which, being depriv'd of its Serolity, circulated ſlowly in the Veſſels, and eſpecially in thoſe of the Head.

2. That this Lymph was very ſuſceptible of Rarefaction, and greatly diſpos'd to obſtruct the Veſſels; a Circumſtance which interrupted the Circulation of the Fluids, and, in a few Days, prov'd fatal to the Patient.

The Remedies generally us'd, on Occaſions of a like Nature, ſuch as ſpirituous Cordials, and others, ſeemingly calculated to attenuate the inſpiſſated Lymph, excited too great a Rarefaction in that Juice, and put all the Fluids into too violent a Motion; they augmented the Fever, threw all the ſolid Parts into a fatal Rigor, and, inſtead of rendering the Lymph fluid, they thicken'd it more, and often haſten'd the Death of the Patient.

As aqueous and diluting Medicines were incapable of penetrating this inſpiſſated Lymph, ſo neither could they ſubdue the Symptoms of the Diſeaſe; nor could a Cure be expected from any other mild and temperate Medicines, which were too weak to attenuate and colliquate the groſs tenacious Lymph. We, therefore, thought, we had Reaſon to have recourſe to Veſicatories, as ſeemingly beſt calculated to anſwer the ſeveral Intentions of Cure; and though the Succeſs of theſe Remedies, when us'd, did not anſwer our Expectation, yet we concluded, that the Error muſt have conſiſted in applying them too late: For both Reaſon and Experience evince, that Veſicatories generally evacuate but a ſmall Quantity of Serum; that they operate much leſs powerfully by their attractive Quality, than by their acrid Salts, which mix with the Blood, and effectually attenuate the Lymph, without exciting violent Commotions in the Fluids. Hence Veſicatories muſt be applied in the firſt Days of the Diſorder, to prevent, if poſſible, the Obſtruction

of the Glands and Veſſels; for if ſuch an Obſtruction is once form'd, and arriv'd at a certain Height, Veſicatories do not operate efficaciouſly, even though they ſhould procure a Diſcharge of a large Quantity of Serum.

Theſe Reaſons influenced us to apply Veſicatories on the firſt, the ſecond, or the third Day of the Eruption; by which means, we found the Appearance of freſh Symptoms prevented: But, for fear of exciting a too violent Irritation, we always delay'd the Application of the Veſicatories, till the Operation of the Purgative was entirely over: And this Caution is ſo much the more neceſſary, becauſe the Veſicatories might be miſplaced by the Motion the Patient muſt neceſſarily uſe during the Operation of the Medicine. In order to hinder theſe Plaiſters from communicating a preternatural Heat to the Urine, the Patient muſt be order'd to uſe no other Kind of Drink than a Ptiſan prepar'd with Mallows, or Barley.

But the Uſe of Veſicatories ought not to ſuperſede that of ſimple Apozems, with which we may mix diaphoretic Antimony, or Abſorbents, or ſtibiated Salt, according as the State and Condition of the Patient ſhall require.

But if the Body is not kept ſufficiently ſoluble, Irritations of the Bladder are to be dreaded, and ſome other Symptoms, which, however, are of a far leſs dangerous Nature than thoſe intended to be remov'd by the Veſicatories.

It is to be obſerv'd, that, in the Small Pox, Veſicatories adhere with Difficulty, and act but ſlowly, on account of the Inflammation produced in the Skin by the Puſtules: For which Reaſon, the Plaiſters us'd in this Diſorder muſt be newly made, richly impregnated with Powder of Cantharides, ſufficiently moiſten'd with Vinegar, and ſecur'd by proper Bandages: Theſe Veſicatories ought to be left on the Part for about twenty-four Hours, after which, we are to cut off not only the Bliſters which are elevated, but, alſo, the Whole of the Epidermis, which is ſeparated from the Skin.

The Dreſſing is to be of the ordinary Kind, with freſh Butter and Beet-leaves.

It frequently happens, that the Part of the Skin from which the Epidermis is remov'd, becomes dry, in a very ſhort time, a ſure Proof of the ſmall and inconſiderable Effects the Veſicatories have produced on the Lymph.

To remove this Misfortune, inſtead of Beet-leaves, we are to apply a Plaiſter prepar'd of an Ounce of ſuppurative Ointment, and two Scruples or a Dram of the Powder of Cantharides. When a ſufficient Diſcharge is made from the Part, we are to remove the Plaiſter, and dreſs with freſh Butter and Beet-leaves.

If Veſicatories have been applied from the firſt, one may judge of their good Effects, by the following Symptoms:

If the Spitting is more abundant, and more fluid.

If the Pock, ſunk before, now riſes.

If the ſwell'd Parts grow leſs firm, and yield to the Touch.

Two Inconveniencies may happen from theſe Veſicatories: 1. That the Humour in the Pock remains too clear, and fluid. And, 2. That the Fever of the Suppuration is prolong'd. To prevent the firſt, all the Pocks, unleſs thoſe on the Face, muſt be cut; which Method, ſometimes alone, makes the Fever ceaſe; if it does not, gentle Cathartics muſt be us'd. The Regimen muſt be incraſſating. There is no Danger in uſing theſe Veſicatories, even to Women who have actually their Menſes.

The third Sort of the Confluent Malignant.

The third Sort of the *confluent malignant* is preceded by the ſame Symptoms as the other *malignant* Kind; but the Eruption begins on the ſecond Day. The Pock is of a black Colour, and but little elevated; when open'd, a black, and very livid, Blood iſſues out, and the Bottom appears gangren'd. The Patient generally makes bloody Urine; many render it by Stool, and ſome by the Noſe, others by the Mouth, in Spitting, Coughing, or Vomiting; ſome by the Eyes. The Intervals between the Pocks are of an obſcure Black, the Fever is briſk, and the Returns violent: They are almoſt always mortal.

If the Phyſician is call'd in time, he muſt begin the Cure by bleeding often in the Arm: If the Patient ſpits or vomits Blood; if he has with theſe a Bleeding at the Noſe, violent Headachs, Convulſions, Drowſineſs, and Wanderings, the Patient muſt be purged gently, as ſoon as poſſible: If there is no Evacuation of Blood by Stool, or Vomit, he muſt, alſo, be vomited: After the Effect of each Cathartic, or at the Interval betwixt each, he muſt take ſome acid Potion. *Sydenham* recommends Spirit of Vitriol. If, by theſe Methods, the Patient can be brought to the End of the Suppuration, which ſeldom happens, the Patient muſt take ſome gentle Cathartic, after which, he muſt conform to an incraſſating Regimen; and the Cure muſt be ended by ſome Antiſcorbutic.

The fourth Sort of the Confluent Malignant Small Pox.

This Species of Small Pox partakes of the Nature both of the *confluent* and *diſtinct malignant* Kinds, though it has a greater Affinity to the latter Species, ſince it hardly differs from it, and ought to be treated in the ſame manner.

The following Symptoms are favourable, in the *malignant* Sort of Small Pox:

If the Fever, and all the Symptoms which preceded the Eruption, abate at the Eruption.

If the Eruption is gradual.

The Elevation of the Pock, and the Redneſs of the Circle at their Baſe.

The Whiteneſs and Conſiſtence of the Liquor contain'd in the Pock.

A Softneſs of the Skin and Tendons.

A gentle Tranſpiration.

A moiſt Heat.

A large Quantity of Urine, and that of a good Colour.

No Diſturbance in the Head, Breaſt, or Belly.

A Ceſſation of all the Symptoms which generally accompany the *malignant* Fever, join'd to the Small Pox.

Diviſion of the bad Symptoms which appear in the Small Pox, into thoſe before the Eruption, thoſe at the Eruption, and thoſe at the Suppuration.

Before the Eruption.

An Inflammation of the Eyes.

A violent Beating of the Carotid Arteries, if compar'd with the Pulſe.

A dry, hard, burning, and painful Skin.

At the Time of the Eruption.

A too ſudden Eruption of the Pocks, in which moſt of them appear in twenty Hours.

A conſiderable Swelling of the Face and Head.

A Stiffneſs of the Tendons, without Convulſions.

Profuſe Sweats.

A Depreſſure, and want of Elevation, of the Pock.

An eryſipelatous Inflammation in the Interſtices between the Pocks.

A ſmall Quantity of Urine, and that thick and cloudy.

A too large Quantity and Crudity of Urine.

An involuntary Fluxion of Tears, from one or both the Eyes, without any conſiderable Inflammation of the Eye-lids, or when the Patient winks with one Eye oftener than with the other, or can't endure the Light.

Such a *Confluence* of the Pocks, as the whole Face ſeems to be but one, is very dangerous.

When the Ptyaliſm, which happens at the Beginning of the Eruption, is thick and glutinous.

At the Suppuration.

If, at the Suppuration, all the Accidents, which ceas'd at the Eruption, return with Violence, the Patient is in great Danger.

When the Pus is clear; not ſo ill in the cryſtalline Sort, as the others.

The Blackneſs of the Pock is a very bad Sign, unleſs, upon Opening, ſome Drops of Blood are mix'd with the Pus, and the Skin at the Bottom appears of a vermilion Red; but if it is of a blackiſh deep Red, it is very bad.

When the Pock ſinks ſuddenly, or the ſwell'd Parts ſink.

When the Stools are greeniſh, and ſerous, it is bad; when thick, bilious, and like a Pus, it is a good Symptom, provided the Pock does not fall.

When the Ptyaliſm ceaſes ſuddenly, and, at the ſame time, the Glands of the Throat ſwell, there is no Hope.

A Pomatum, to be us'd in the Small Pox.

Take two Ounces of the Oil of the Four cold Seeds; of *Sperma Ceti*, two Drams; and of Virgin Wax, three Drams: Melt all in *Balneo Mariæ*, and ſtrain; then ſlice it down with a wooden Spoon, and put it, by ſmall Portions, into a marble Mortar: Beat the Whole, for three or four Hours, with a wooden Peſtle, pouring now-and-then upon it a little pure Spring-water: Then add ſome Drops of the Oil of Citron, or a few Spoonfuls of Orange-flower-water.

When this Pomatum is to be us'd, we are to take ſome of it on the Point of a Feather, and gently anoint all the Puſtules on the Face.

We may begin to uſe it when the greateſt Part of the Puſtules, being ſuppurated, appear white, which generally happens about the End of the ſeventh Day; though there would be no Danger in uſing it before the End of the Suppuration. This Liniment may be repeated frequently every Day, and ought to be applied as often as the Face becomes dry, in order to hinder, as much as poſſible, the exterior Pellicle of the Puſtules from becoming hard and dry too ſoon.

In preparing this Pomatum, it is abſolutely neceſſary to beat it very long, in order to procure an intimate Incorporation of its Ingredients, and render it as white and light as poſſible.

It may be preſerv'd for ſeveral Days, without Corruption, provided it is kept in a cool Place: If it ſhould become too thick, it muſt be again beaten in the Mortar, obſerving, now-and-then, to mix ſome Drops of Water with it. But if it ſhould become yellow, or contract a bad Smell, we muſt uſe it no more, but make a freſh Pomatum of the ſame Kind. *Helvetius.*

The Small Pox is a Diſorder very frequent among Infants; and though it is ſo accurately deſcrib'd by *Sydenham*, that his Account of it deſerves to be read with the greateſt Care, yet I ſhall ſpecify ſome Things which evince, that the Small Pox may be reduced to the ſame Simplicity with the other Diſeaſes, and that ſomething is, as yet, wanting, in the Method of Cure.

The Small Pox is generally epidemical, beginning firſt in the Spring, increaſing in the Summer, languiſhing in the Autumn, generally diſappearing in the ſubſequent Winter, and next Spring returning in the ſame Order. The ſooner it begins before the End of the Winter, the more malignant is its Nature; and, the later it begins, the more mild and benign the Diſorder is. Hence it is obvious at what particular Seaſon of the Year it is moſt dangerous.

It ſeizes Perſons of all Ages, and Sexes, but eſpecially Children, provided they have not before labour'd under it. The more Age has diſſipated the Fluids, and corroborated the Solids, the more violent the Diſorder: Hence the Small Pox is milder, and more eaſily cur'd, in Children, Women, and thoſe of ſoft or lax Habits, than in thoſe accuſtom'd to Labour, full-grown, and old Perſons.

Though this Diſorder is epidemical, it is, nevertheleſs, convey'd from an infected to a ſound Perſon, by a certain Contagion, which, being lodg'd in the Air, is with it communicated to the Lungs, Fauces, Noſtrils, Oeſophagus, Stomach, and Inteſtines; ſo that the Diſorder ſeems, at firſt, to ariſe from a ſmall Quantity of poiſonous, or peccant Matter.

This contagious Matter, when mix'd with the Fluids, immediately produces certain Effects, which mutually ſucceed each other, ſuch as Horripilation, Rigor, an acute Fever, an intenſe and perpetual Heat, a preternatural Splendor of the Eyes, ariſing from a Defluxion of a hot and ſubtil Liquor; an intenſe Pain of the Head and Limbs, but eſpecially about the Parts below the Pit of the Stomach; a Vomiting, and Nauſea; an inſupportable Inquietude; a Stupor; a Drowſineſs; and, in Infants, epileptic Fits.

In the Beginning of this Stage of the Diſeaſe, the Blood, taken from the Patient's Veins, is beautiful, and reſembling that of a ſound Perſon; but, on the third or fourth Day, it appears like pleuritic, or inflam'd Blood, and the more it aſſumes this Appearance, the longer, or more violent, the Diſorder has been.

This Stage continues in Proportion to the Variety of epidemical Cauſes, the Violence of the Diſeaſe, the Habit of the Patient, and the various Seaſons of the Year. The longer this Stage naturally is, the milder it will be, through all its Stages; and the ſhorter, the more violent.

Hence this Stage of the Small Pox ſeems to conſiſt in an increas'd Velocity of the Fluids, by means of an inflammatory Stimulus mix'd with all the Parts of the Blood.

The Small Pox, therefore, which bears an Affinity to all acute inflammatory Diſorders, is, in this Stage, with Difficulty diſtinguiſhed from them: A Knowledge that the Diſeaſe rages epidemically; that the Patient is diſpoſed to it; that there is a previous Contagion, and the Symptoms of it produced, evince, that the Small Pox is preſent, and that the Puſtules will ſucceed in its other Stage, to be afterwards deſcribed.

When the firſt Stage of the Diſeaſe is known, the ſole Intention of Cure ſeems to conſiſt in removing the inflammatory Stimulus, curing the preſent Diſorder, hindering its farther Progreſs, and preventing a future Suppuration and Gangrene.

The inflammatory Stimulus may be removed; by Correction with Specifics, or by an univerſal antiphlogiſtic Method.

The ſpecific Correction of the inflammatory Stimulus ought to be obtained by Remedies oppoſite to the contagious Poiſon, ſo ſmall a Quantity of which, admitted into the Body, produces all the other Symptoms of the Small Pox.

A ſtrict Compariſon of the Hiſtory of Antidotes, and the Nature of the Small Pox, afford ſome Reaſon to hope that ſuch a Remedy may be found, and that great Advantages may ariſe to Mankind from it.

The Succeſs of Antimony and Mercury, by Art rendered highly penetrating, not corroſive with a too ſaline Acrimony, but duly mixed with each other, induces us to ſeek for ſuch a Remedy in theſe two Medicines. Thus,

Take of unwaſhed diaphoretic Antimony, ſix Drams; of *Mercurius Dulcis*, half a Dram; and of the beſt *Sal Polychreſtum*, one Dram: By long Trituration reduce to a fine Powder; to be divided into twenty-four equal Doſes; one of which is to be taken every three Hours, drinking after it four Ounces of recent Whey. Or,

Take of the Flowers of Sulphur, one Dram; of Cinnabar of Antimony, one Scruple; and of nitrated diaphoretic Antimony, and *Sal Polychreſtum*, each one Dram and an half: Reduce to a fine Powder; to be divided and taken in the ſame manner with the former.

In the Small Pox we may, alſo, uſe the univerſal antiphlogiſtic Method, and take thoſe Meaſures which, in all inflammatory Diſorders, are found effectual for hindering the Inflammation from degenerating into *Pus*, or a Gangrene. Nor, as theſe Meaſures prove ſucceſsful in other Diſorders, is it to be doubted, but they would, alſo, do ſo in this. Hence it is not impoſſible that a variolous Fever may be often preſent, without the Small Pox.

That the univerſal antiphlogiſtic Method may be obſerved, it is neceſſary, firſt, that the Patient ſhould have a ſufficient Quantity of Blood taken from him. Secondly, That the whole Skin, Fauces, Oeſophagus, and Inteſtines, ſhould be frequently relaxed with Clyſters and Fomentations. Thus,

Take of the Flowers of Mallows, Marſhmallows, Dandelion, Mullein, and Soapwort, each half an Ounce; and of Linſeed-meal, two Drams: Boil in twelve Ounces of Water, for a Clyſter; to be injected every twelve Hours.

Woollen Cloaths, alſo, wet in the ſame Decoction, are to be applied warm to the inferior Parts of the Body; ſuch as the Feet, Hams, Groin, Thighs, and Legs: The Mouth, Fauces, and Noſtrils, are, alſo, to be waſhed and moiſtened with the ſame Decoction. Thirdly, The Patient muſt drink large Quantities of thin, acidulated, or nitrated farinaceous Water; he muſt, alſo, drink antimoniated Nitre, or the *Sal Polychreſtus*, in Milk and Water. Thus,

Take of the recent Flowers of the wild Poppy, and Elder, each one Ounce; and of entire Oats, half an Ounce: Boil in a ſufficient Quantity of Water, with each twenty Ounces of which mix, of ſtibiated Nitre, that is, ſuch as has been ſeparated from diaphoretic Antimony by waſhing and Cryſtallization, half an Ounce; of recent Citron-juice, one Ounce; and of the Syrup of Violets, one Ounce and an half: Of which Preparation the Patient may drink as much as he pleaſes.

Fourthly, The Patient's Aliments ought to be light, the Air drawn into his Lungs pretty cool, and his Body muſt be kept well covered, and perſpirable. For Aliments of this Kind, ſee the Article FIBRA.

Though in the Small Pox the Intention of Cure, and eſpecially the Method of obtaining it, already mentioned, are rarely thought of; yet ſuch Meaſures have accidentally proved ſucceſsful, even when Phyſicians have been ignorant of the Diſeaſe.

When this Diſorder finiſhes its firſt Stage, which is that of Contagion, it enters upon another, which may be deſcribed thus: The Skin, firſt, of the Head and Face, then of the Hands and Arms, and, laſtly, of the Trunk and interior Parts of the Body, is infected with ſmall red Specks, like thoſe produced by the Bites of Gnats; ſoon after, all the Symptoms are mitigated, and every Hour the red Puſtules are continually enlarged in Bulk, and Number: They are, alſo, more elevated and inflamed, till, at laſt, the Skin becomes tenſe: Heat and Pain are produced, and the Circulation of the Blood, and Perſpiration of the Humours, are retarded. Hence ariſe the greater Repulſion of the Humours to the internal Parts; the Fever; the Anxiety; the Difficulty of Breathing; the Pain of the Fauces; the Quinſey; the *Diarrhœa*; the Dyſentery; the Diſcharge of bloody Urine; the Spitting of Blood; and the hot, red, and painful Inflammation of the Skin lying between the Puſtules; which, when they have continued four, five, or ſix Days, are abſolutely ſuppurated, and converted into as many ſmall Apoſtems. I call this Stage of the Diſeaſe the Progreſs of the Inflammation into an Abſceſs: This Stage laſts, according to the Variety of epidemical Cauſes, the Temperature of the Patient, the Violence of the Diſeaſe, the Regimen, and the various Seaſons of the Year, for the moſt part, four or five Days; ſo that on the eighth Day, from the Beginning, there is generally a Suppuration, at which time the Blood is highly inflamed.

If the Contagion is violent, the Puſtules numerous, adjacent to each other, and, as it were, intermixed, all the Signs of the Inflammation great, the Patient of a ſaline oleous Temperament, in the Vigor of his Age, and accuſtomed to delicate Living; if the Regimen and Remedies greatly increaſe the Circulation of the Humours, and if the Summer is very hot; then, towards the End of the Inflammation, red Veſicles, diſtended with Lymph, appear, and are Marks of a gangrenous State of the Juices. Hence the Skin becomes unfit for the Circulation and Exhalation of the Fluids, which are, for that Reaſon, more repelled to the internal Parts. Hence ariſes the exceſſive Salivation, and the Swellings of the Hands and Feet.

From what has been ſaid, we may learn the Diagnoſtics and Prognoſtics of the ſecond Stage of the Small Pox; as, alſo, the Nature of the Diſeaſe, and its Symptoms, which are generally circumſcribed within theſe Rules.

The milder the Stage of the Contagion is, the gentler, alſo, that of the Inflammation will be.

The more ſlowly the Puſtules make their Eruption, and, conſequently, the longer the State of the Contagion is, the Diſorder is proportionably ſlighter.

The larger, fewer, more diſtant, more remote from the Face, the whiter, and, at laſt, yellower the Puſtules are, or the more ſlowly they proceed, the better, and more favourable, they are.

The more numerous, ſmall, and intricate, the Puſtules are, the more there are on the Face, the more brown or black, or the quicker their Progreſs, the worſe they are.

The more the Matter of the Puſtules reſembles mild and perfect *Pus*, the better it is.

The more the Matter of Puſtules reſembles a gangrenous Ichor, the worſe it is.

The redder the Interſtices between the Puſtules are, and the more hot, tenſe, and tumid, about the Time of Suppuration, it is ſo much the better, on account of the Circulation ſtill remaining in theſe Parts.

The more the Parts lying between the Puſtules are pale, or blackiſh, the worſe; ſince theſe Signs prognoſticate a mortal Quinſy, or a Peripneumony, unleſs a copious Salivation, or an exceſſive Tumor of the Hands, ſhould come on: For the Circulation of the Blood is retarded here, and, conſequently, increaſed towards the internal Parts.

If, in the Places between the Puſtules, purple-coloured Spots appear, a mortal Gangrene is denoted.

The Intentions of Cure to be purſued in this Stage of the Small Pox, are various, according to the Degrees and Duration of the Diſeaſe: For, in the firſt Beginning of the apparent external Inflammation, Care ſeems requiſite, to prevent degenerating into a Suppuration, concerning which, we have already treated: Or, if this Caution is neglected, we are to take care that the Suppuration be as ſmall as poſſible, far from the Head, and ſlow; which End is obtained, firſt, by the lighteſt Aliments, and ſuch as reſiſt Putrefaction. See FIBRA. Secondly, By diluting, mild, and ſomewhat acid Liquors, ſuch as thoſe already mentioned. Thirdly, By deobſtruent, aperient, and diluting Liquors, continually drank in large Quantities. Thus,

Take of the recently extracted Juices of Succory, Lettuce, Dandelion, and Fumitory, each two Ounces; of the Roots of Vipers Graſs, four Ounces; and of pure Nitre, one Dram and a half: Mix all together, and let the Patient take one Ounce every Hour of the Day. Or,

Take of *China* Root, and the Roots of Sarſaparilla, and Graſs, each two Ounces; of the Roots of Vipers-graſs, eight Ounces; and of Elder-flowers, one Ounce: Boil for an Hour, in a ſufficient Quantity of Water, to ſix Pints; of which let the Patient take five Ounces every Hour.

Fourthly, By bathing the Feet twice a Day, and continually fomenting them with a tepid Fomentation; applying, at the ſame time, epiſpaſtic Plaiſters to the Soles of the Feet, and the Hams. Thus,

Take of the Melilot Plaiſter, of *Galbanum*, and *Sagapenum*, each one Ounce: Mix all, ſpread upon a Piece of Leather, and apply to the Soles of the Feet. Or,

Take of the Crums of ſtale Bread, ſix Ounces; of Rue, a Handful; of bruiſed Muſtard-ſeed, ſix Drams; and of Salt, and Vinegar, each four Drams: Mix all together, and apply to the Soles of the Feet, and the Hams.

Fifthly, By a ſomewhat cold Regimen, and eſpecially by the Admiſſion of a pretty pure and cool Air; taking care, particularly, to guard the inferior Parts of the Body from Cold.

Sixthly,

Fifthly, Theſe Meaſures are to be taken in the very Beginning of the Diſorder. And, ſixthly, If the Diſeaſe is intolerably violent, Opiates are to be uſed in the Afternoon, at Five o'Clock; taking care not to neglect the other Circumſtances preſcribed. Thus,

Take of the Syrup of white Poppies, one Ounce: Make into a Draught. Or,

Take of pure *Laudanum*, one Grain: Reduce to the Form of a Pill. Or,

Take of pure *Laudanum*, one Grain; and of diſtil'd Mint-water, half an Ounce: Mix for a Draught.

After this ſecond Stage of the Small Pox, there ſucceeds a third, which is that of the Suppuration; in which the Diſeaſe is gradually increaſed, and perfected. During this Stage, the purulent Puſtules are daily increaſed, and then, being maturated, become white, or yellow, and break on the third or fourth Day of this Stage: Then the whole Fat and Skin abound with a moveable *Pus*, whilſt the external Parts are dry'd, and ſuch of them as are diſengaged from Puſtules, inflamed. Hence, by the Obſtruction of the Circulation and Perſpiration, by the Irritation of the nervous and membranous Syſtems, and the Abſorption of the *Pus* into the Veins, a malignant Fever, accompanied with the moſt terrible Symptoms, is produced. If this purulent Matter is mixed, and circulates long with the Blood, hence, according to its Congeſtion in various Parts of the Body, it produces various, and hardly ſurmountable Effects, ſuch as a *Delirium*, a *Phrenitis*, a Peripneumony, a Pleuriſy, a Vomiting, a Dyſentery, an *Hepatitis*, Apoſtems, Carbuncles, Tumors of the Joints, Abſceſſes, Stagnations of the Fluids, a tabid Diſpoſition, a Phthiſis, and many other terrible Diſorders.

But if the variolous Matter is ſubtile and acrid, and the Diſeaſe violent, the Skin, Fat, and Muſcles, are corroded, whilſt broad malignant Ulcers are formed, which often penetrate to the Bone, and leave unſeemly Cicatrices behind them.

In this Stage of the Small Pox, a Diſcharge of the *Pus* to the external, and a Repulſion of it from the internal Parts, are to be obtained; which Ends are beſt anſwered by relaxing the Skin with tepid and relaxing Fomentations, carefully and conſtantly renewed; by frequently waſhing and gargarizing the Mouth and Fauces; by liberal Draughts of warm, cardiac, detergent, aperient, and antiſeptic Liquors; by mild, diluting, emollient, and laxative Clyſters, daily injected, and long retained; by living upon Broths prepared of Fleſh, and ſeaſoned with Salt and Acids; and by the moderate, though not too frequent, Uſe of generous Wines; exhibiting, at the ſame time, proper Doſes of Opium, againſt the violent Shocks of the Diſorder. The Liquors and Medicines proper for theſe Intentions are already ſpecified under this Article.

If the Diſeaſe is violent; if there is a gangrenous Ichor, inſtead of *Pus*; if almoſt the whole Skin is covered with Puſtules; it is ſufficiently obvious, why the Small Pox is productive of ſo unhappy Effects, and even of Death: But this will be beſt underſtood by him, who, from Anatomy, knows, that not only the external Skin, but, alſo, the Eyes, all the Membranes of the Noſtrils and Mouth, the *Aſpera Arteria*, the *Bronchia*, the *Oeſophagus*, the Stomach, the Inteſtines, the Liver, the Spleen, and the Lungs, are full of theſe Puſtules: For the Perſon who knows this, underſtands the Reaſons of what has been ſaid, perceives what is neceſſary to the Cure, and whether the Violence of the Diſeaſe, and the Death of ſo many Patients, always happening after the Uſe of common Means, are not Circumſtances which ought to excite the Care and Induſtry of the Phyſician in the Beginning of the Diſeaſe, ſince, by the common Method, accidental Cures are only produced, by the Force of Nature. Inoculation ſeems to be a Practice ſufficiently certain and ſafe. *Boerhaave.*

Boerhaave's Judgment, with reſpect to the ordinary Method of treating the Small Pox, is very remarkable. His Words are, "Vulgata quippe Methodo nullus niſi ſponte emergit:" *By the common Method, accidental Cures are only produced, ſpontaneouſly, that is, by the Force of Nature.* I will not preſume to determine how far this Aſſertion is true; though I ſhould ſooner believe it of this Diſtemper, than of almoſt any other I am acquainted with; and candid Phyſicians are ſenſible that it is not entirely without Foundation. Whoever, therefore, propoſes a more certain, and leſs exceptionable Method, deſerves, at leaſt, that his Sentiments ſhould be examin'd with Candor; and, if Experience gives a Sanction to the Novelty, the Inventor merits all Kinds of Acknowledgments from Mankind, for the important Diſcovery.

As I had heard of conſiderable Succeſſes in the Treatment of the Small Pox, attending a Method within theſe few Years introduced by Dr. *Thompſon*, I judg'd it my Duty to enquire of himſelf what that Method was, and upon what Obſervation, it was founded. The *Doctor* has been ſo obliging to me, and the World, as to communicate what I aſk'd, without Reſerve; and has given me Leave to make publick the following Treatiſe on this hitherto invincible Diſtemper; which I hope and believe will be agreeable to all thoſe who conſider Truth as the End of their Reſearches, and prefer the Welfare of Mankind, and Improvement of Phyſic, to all leſs generous Conſiderations.

The Small Pox is a Diſeaſe, that, at this time, is ſpread, in a manner, over all the known World, ſeizing, firſt or laſt, all Sorts of People, not ſparing either Sex, Conſtitution, Climate, or Age; and whether it be from a Violence peculiar to the Diſeaſe, or from the various or improper Methods of Treatment, I cannot ſay, but, at leaſt, every Day's Experience ſhews us, that it is, at this time, more univerſal than the Plague, and not much inferior to it in Danger. The many Authors who have treated expreſly upon this Subject, the many Revolutions which have happen'd, both in the Theory and Practice, the Controverſies yet ſubſiſting, and the Points in Debate of ſuch Conſequence, their Opinions being ſo extremely wide from each other, that any Phyſician, who attempts the Cure of this Diſeaſe, ſhould he not be entirely in the Right, would be ſo far from relieving the Patient, that he muſt rather join with the Diſeaſe, and render it more fatal, are the Motives that have induced me to give the Obſervations I have made in the Courſe of my Practice, concerning the Small Pox, which was, as it appears from Hiſtory, unknown till the ſeventh Century, but now has taken ſuch Root in the World, that it is even become hereditary to us.

The Small Pox, not being deſcribed by any of our *Greek* or *Roman* Phyſicians, proves almoſt to a Demonſtration, that it never appeared either in the *Greek* or *Roman* World. Such Authors as *Hippocrates*, *Aretæus*, *Celſus*, and *Cœlius* the *Africa*n, (rather *Soranus* the *Epheſian*) who were ſo excellent in the deſcriptive Part of Phyſic; inſomuch that I might ſay, we have rather the moſt finiſhed Pictures of Diſeaſes than Hiſtories (for they excelled in Deſcription, as they did in Poetry, Sculptures, and Painting); it was impoſſible this Diſeaſe, had it then exiſted, could have eſcaped their Attention: Yet it is not impoſſible, but it might have then exiſted, in ſome other Parts of the World: And there have been thoſe Phyſicians, who have endeavoured to trace it from *India*, from thence to *Arabia*; but we all know it appeared in *Egypt*, brought there by the *Arabians*, when they conquered that Kingdom, during the Caliphat of *Omer*; from thence it ſpread where-ever they carried their Arms, their Religion, and their Commerce; through *Egypt*, *Syria*, *Paleſtine*, *Perſia*, *Lycia*, along the maritime Parts of *Africa*, from thence into *Spain*, and afterwards diffuſed itſelf, by the Progreſs of our *European* Diſcoveries, Wars, and Trade, over almoſt all the known Parts of the World. *Rhaſes*, who flouriſhed in the Ninth Century, a *Syrian* by Birth, *Arabian* by Extraction, and *Mahometan* by Religion, appears to be the firſt Writer we have extant, who treats of this Diſeaſe.

We have had, at leaſt, a thouſand Authors, who have treated of the Small Pox: Thoſe for the firſt five hundred Years varied but very little; neither can I ſay there have appeared any controverſial Writings, among Phyſicians, of Moment, till *Sydenham*, the great Obſerver, aroſe. The Practice for a Century or two before his Time was a common beaten Path, ſupported only by ſome fooliſh *Hypotheſis*, or empirical Receipts. They aimed chiefly, with Cordials, and other means, to promote the Eruption: Hence they imagined a kind of Poiſon expelled from the vital Parts to the Circumference. In the Courſe of Maturation, or the Filling of the Small Pox, the ſame Method was continued, leſt the Poiſon ſhould revert again to the noble Parts. The Reaſons which induced Phyſicians to this Comportment in their Practice, ſeem to me to be theſe: They obſerved, during the firſt Stage of this Diſtemper, that is, till the laſt Day of the Eruption, their Patients to be agitated with great Inquietudes, and the Symptoms to be extremely high, which generally abated, when the Small Pox was entirely out: Wherefore, by promoting the Eruption (which they thought could not be done, but by Warmth, and hot Medicines) they imagined the Poiſon expelled; and expected the Symptoms would abate, which appeared to them a Demonſtration of an Expulſion of morbid Matter. But how great will *Sydenham* appear, when we ſhow the Motives which led that great Man to a Method of Practice, which entirely overthrew the vicious Practice that then prevailed with reſpect to this Diſtemper? He took Nature for his Guide, depending chiefly upon Obſervation and Experience, ſupported by Reaſon. He obſerved, that, among common People, where nothing was done, that the ſlower, and the later the Eruptions appeared, the more favourable was the Sort; and laid down this as a kind of Aphoriſm, that if the Small Pox appears the firſt Day of the Sickneſs, it might be looked upon as a kind of Plague; if it came

out on the ſecond Day, extremely dangerous; if on the third, leſs ſo; if on the fourth, the diſtinct Sort, and generally without any Danger. From whence he juſtly concluded, that the Phyſicians were entirely in the wrong to haſten the Eruption, which a prudent Man would dread to ſee till the fourth Day.

Sydenham had his Followers: The Populace, who think they have a Right to give their Opinions in Phyſic, made this Diſtinction; the cool Regimen, and the hot; obſerving one Set of Phyſicians confining their Patients immediately to their Beds, and giving them Medicines of the warmeſt Kind, in order to drive out the Small Pox; the others leaving, as it were, the Eruption to Nature alone; and ſometimes taking a little Blood away, as their great Maſter *Sydenham* directed. We ſhall omit ſpeaking of the Variety of empirical or quack Medicines, ſince they generally were of the ſtimulating and heating Kind, that were given, in order to promote either the Eruption, or, after they were out, to ripen and carry on Maturation; for I allow of no peculiar Virtues in any Medicines, but in the Application, according to the Intention of an underſtanding Phyſician. *Sydenham*, then, made no farther Diſcoveries in the Small Pox, if we except the elegant Deſcription he gives of the Diſeaſe, than during the firſt Period, that is, till the ſixth or ſeventh Day, when the ſecondary Fever begins to ariſe. At this Period he took Notice, that towards the ſeventh Day, at Night, all of a ſudden, notwithſtanding the Symptoms were appeaſed, the Pulſe became regular, and all the Small Pox out over the whole Body; the Water well coloured, or thick; the Eyes cool, and not with that fiery Luſtre as before; the whole Storm allayed, that agitated the Sick, during this firſt Stage of the Small Pox: He obſerved, and, perhaps, this Obſervation may be looked upon as one of the moſt important in Phyſic, that, upon the coming on of the ſecondary Fever, it came not on by degrees, but like a Storm, which begins at once like a violent Hurricane; the Patient becomes ſuddenly light-headed; the Eyes blood-ſhot, ſtreaming with Water; the Urine pale; the Pulſe quick and hard, a ſore Throat, *&c.* Here again he departs from former Phyſicians: He orders his Patient to be taken out of Bed, to be kept cool; the Feet bathed in warm Water, and Opiates repeated from time to time, till this Kind of Phrenſy, and other violent Symptoms, ceaſe. He then falls into the Practice of the Phyſicians he oppoſed, from this Time to the next remarkable Stage of the Small Pox, by allowing ſome cordial Medicines to keep up, as they term it, the Pock; but upon the Face ſubſiding, the Spitting growing more viſcid, and, at laſt, ſtopping, on the tenth or eleventh Day, he falls into the moſt fatal Miſtake, as well as others, and thinks there can be no Safety, if the Spitting returns not again, and the Hands ſwell, unleſs theſe Points are obtained by the Adminiſtration of the ſtrongeſt and moſt powerful Medicines; and this fatal Miſtake is owing to an *Hypotheſis*, which involved at that time all the World, and even *Sydenham* himſelf. For they ſuppoſed an eſſential Poiſon peculiar to the Small Pox, which, till this time, ſpent, itſelf by Salivation, and the Swelling of the Face, reverted back to the nobler Parts; that Nature being weak and debilitated, unable to expel this morbific Matter, falls under the Weight, and the poor Patient expires. Notwithſtanding he was unable to obviate this laſt terrible Stage of the Diſeaſe, and reaſoned and acted but as others did, however, like an able Mariner, who had made many Diſcoveries, and wanted ſtill more to complete his Voyage, announces, like a Prophet, thoſe Dangers he was unable to ſhun; and points out thoſe Rocks, againſt which he and the reſt had been ſhipwrecked. He ſays, and, in this Part, he even excels the *Greeks* in Deſcription, that if the Spittle grows thick and ropy, and ſtops entirely, the Face, which was elevated and ſwelled before, ſuddenly falling, and the Hands not ſwelling, the Patient neceſſarily dies: But if the Face continues elevated beyond ſuch a time, the Spitting continuing, alſo, beyond ſuch a Period, the Patient certainly lives.

We may compare what *Sydenham* did, to what my Lord *Verulam*, that noble and illuſtrious Obſerver of Nature, did on another Occaſion: He not only made ſurpriſing Diſcoveries himſelf, but he laid down a Plan, and recommended a Continuation of Natural Hiſtory to Poſterity to trace out, it being impoſſible for the ſhort Life of one Man to compile ſo immenſe an Hiſtory, as the boundleſs Field of Nature affords. The Honourable Mr. *Boyle* began where the other left off, and happily executed the Plan the other great Philoſopher had laid down.

Sydenham then, having made many Diſcoveries, in regard to the Small Pox, looked upon it as a true inflammatory Fever; every Puſtule he conſidered as a phlegmonous Tumor; he conducted his Patient extremely well to the Beginning of the ſecondary Fever; but when that roſe too high; when the Matter was ill concocted; the Face ſinking; the Spit growing viſcid, and, at laſt, ſtopping; like a Prophet indeed, he announces the Danger, though his incomparable Skill in Phyſic, great as it was, could not avert it.

Thus Phyſic ſtood, after his Death, with regard to the Small Pox, till *Helvetius* appeared, who found, that, at the Turn of the Pox, when thoſe fatal Symptoms, which *Sydenham* took Notice of, preſaged certain Death, there had been no other Means uſed than by giving the Patient the ſtrongeſt Cordials, which always failed; he introduced, therefore, Purging; a Method as eſſentially different from the then eſtabliſhed Doctrine in the laſt Stage of the Small Pox, as *Sydenham's* was, with reſpect to the firſt: Here, then, they promoted, and raiſed a Fever, which was too high already; there he reſtrains it by Purging. But *Helvetius* being led through a kind of Hypotheſis to theſe Motives, and not from any Experience or Reaſon, no Wonder he remained ſtill in the Dark, unable to unveil the Difficulties attending this Diſeaſe. He divides the Small Pox into ſeveral Species, and notwithſtanding his being ſenſible of its being an Inflammation *ſui Generis*, yet is very far from treating it always as ſuch. I can find nothing remarkable in what he has done, *unleſs the Purging at the Turn of the Small Pox.* This Method Dr. *Freind*, in *England*, followed, and took a great deal of Pains to eſtabliſh this Doctrine here among us. It was with the utmoſt Difficulty he carried his Point: This Practice being ſo extremely wide of what was then ſo firmly eſtabliſhed for many Ages, the giving of Cordials to promote the Eruption; as the Patient ſunk under the Load, ſtill the more Cordials were given: And thus they continued augmenting their Doſes, till the Patient was burnt up. This was the Doctrine and Style of the Phyſicians, which the Standers by, and the Women, came readily into. Nurſes, then, found it no hard matter to conceive the Force of their Doctrine: They ſaw it only conſiſted in confining a Perſon to a warm Room, always in Bed; and with the greateſt Diligence taking Care, that the Patient might not be expoſed to the Air; and all this, leſt the Eruption ſhould fall back; and giving the Patient continually a Set of Cordials, to ſtrengthen, ſupport, and keep the Diſeaſe from the Heart. This Jargon ſquared with the common People; and, as they found one half of the Cure depended upon Nurſing, they claimed ſoon the Province of being Doctors in this Diſtemper. No Wonder, when *Freind* introduced this *French* Cuſtom of Purging, and at a Period of the Diſeaſe, when they imagined, that, if ever, Cordials were of Uſe, they were at that time, when the Patient was languiſhing, and dying, on the eleventh Day, that his Method of Purging was ſo great a Contradiction to their Method, that they thought it downright Murdering the Sick. *Friend* wrote to ſupport this new Practice; and the Drs. *Mead*, *Frewin*, and *Cade* came into it. As a Controverſy aroſe, *Woodward* and others oppoſed it. However, the Phyſicians, from that time to this, have ventured, in extreme Danger, in the laſt Stage, to give a Doſe of purging Phyſic; and ſometimes to take away a little Blood. But as *Freind* reaſoned, alſo, on an Hypotheſis, and conſidered a Poiſon to be carried off by Purging, he ventured not to give ſuch a Medicine as long as there was any Swelling, and till the Spitting was in a manner over. Thus he ſtayed till the Patient was upon the Point of expiring, before he began this Method, which was generally too late. Beſides, this Hypotheſis detained him in a moſt profound Ignorance of the Nature and Cure of this Diſeaſe; for he reaſoned thus: While there is any of the morbid Matter paſſing off the uſual Way, by the Swelling of the Face, however little, as well as by the Spit, however viſcid and decreaſing, we are to expect no farther Aſſiſtance this Way, when we once begin Purging: For the Whole depends, then, upon carrying off the morbid Matter by Stool: He conſidered the Patient in a depreſſed State; not depreſſed by the Violence of a Fever: For, if he had conſidered this Caſe, as that of a Perſon ſinking in a common Pleuriſy, from the Height of the Inflammation, he would have avoided this Error. While he purges, he fears his Patient may ſink, and ſo ſupports him with Cordials. By theſe means he is loſt and puzzled, not acting rationally, as in an Inflammation well known, ſuch as a Pleuriſy; where Phyſicians conſider a depreſſed and undulating Pulſe, clammy Sweats, great Weakneſs, *&c.* as Signs of the Effect of an high Inflammation; they conſider the Patient oppreſſed by the Violence of the Fever: Nay, ſhould a Looſeneſs appear, it alters not the Caſe, their whole Aim is at curing the Inflammation by Evacuations, whence they juſtly expect the Pulſe to riſe, become fuller and more diſtinct, which, in Reality, if the Patient be recoverable, always happens. *Freind*, and his Followers, then reaſoned not in the Small Pox, as *Sydenham* did in a Pleuriſy; but the Expulſion of the morbid Matter was what he chiefly aimed at; which Hypotheſis kept him from the true Knowledge of the Nature of this Diſeaſe. And, notwithſtanding he followed *Helvetius*, in Purging in the laſt Stage of the Small Pox, which Evacuation, I muſt own, is one of the proper

Means

Means to limit the Fever: Yet, as what he did, proceeded from Hypotheſis, and not from Reaſon, he deſerves no juſt Praiſe, becauſe Hypotheſis kept him in the Dark, from knowing at what Time a Medicine ſhould be given; how often it ſhould be repeated; or what kind of Purges were preferable; or what other Means would more effectually oppoſe that Fever, which, if not checked betimes, moſt certainly deſtroys the Patient. His conſidering Purging in the Small Pox, without knowing the Reaſon for acting ſo, is, after all, but a kind of Empiriciſm; for he depends upon the ſpecific Force of one Medicine: Whereas, had he been led by Reaſon, he would have known, that, by ſubduing the Fever, he obtains his Ends; and that this Point may be obtained by various Means: For whatever Medicine that has Power to effect this, will both prolong the Spitting, and the Swelling of the Face, the two principal Objects, in the laſt Stage of the Small Pox, deſerving the Attention of the Phyſician: For, if theſe two Circumſtances ſucceed, the Patient certainly lives.

Boerhaave is the next Author who has wrote expreſsly on this Diſeaſe; an Author of the moſt profound Erudition, and extenſive Practice, who, after having read, as he ſays, a thouſand Authors, gives it as his Opinion, that there are ſcarce any worthy to be read, unleſs the ſecond *Hippocrates*, *Sydenham*.

Boerhaave has gone farther towards a Diſcovery of the Nature and Cure of the Diſeaſe, than all the Phyſicians who preceded him: He conſiders the Diſeaſe as a true Inflammation: He not only thought it improper to force the Small Pox out; for he very well knew, the ſooner the Eruption appeared, the more fatal: But he, alſo, ventured to reſtrain a too ſudden Eruption: And he even ventures farther, and recommends it to Phyſicians hereafter, to attempt to cure this Diſeaſe in the very firſt Stage, by preventing even a Suppuration of the Puſtules. And he reaſoned thus: In a Pleuriſy, in a Quinſey, and other inflammatory Fevers, is not the Phyſicians Attention principally to reſolve the Tumors; and do not they labour all they can to prevent the Formation of Matter; why then do we ſuffer Matter to be formed in this Diſtemper? And is not the Reſolution of ſuch Tumors, by the Power of Medicines, in other Words, the curing of ſuch Diſtempers?

Although *Boerhaave* reaſoned ſo juſtly, yet he either was not capable of bringing this to bear, or the Diſeaſe is impoſſible to be ſubdued, without taking its uſual Courſe, that is, by Suppuration: Yet this Advantage accrued from ſuch Reflections, by endeavouring to prevent the Eruption, which could not be retarded, generally, beyond the fourth Day; yet the Violence of the Fever was ſo far abated, though not to be extinguiſhed, that it produced the Eruption later, and, of conſequence, with fewer Puſtules; and for the ſame Reaſon, the Suppuration was kinder; and, therefore, the Diſeaſe leſs dangerous.

It ſeems wonderful to me, that ſo great a Man, who reaſoned with ſuch Preciſion, and practiſed with ſo much Judgment, had not thoroughly comprehended this Diſeaſe.

Upon the Riſe of the ſecondary Fever, as that increaſed, and the Spit became more viſcid, the Face ſubſiding, he abandons, as it were, his former Reaſons and Method of Practice; his Views are now entirely for promoting Salivation: And, in order to promote this great End, he thinks ſome Means may be found out. Antimonial Medicines he ſeems to think the moſt probable to effect it. Although he mentions no morbid Matter, yet what he propoſes, implies as much. He muſt ſuppoſe, that the Spitting carries off ſome Poiſon, or morbific Matter, as People think a Salivation anſwers the ſame Purpoſe in the Venereal Diſeaſe.

Here then he falls into an Hypotheſis, which points out to him the Uſe of an empirical Medicine; for had he reaſoned as juſtly on this Stage of the Diſeaſe, as he did on the firſt, he would have found, that the limiting the Violence of the Fever, let the Medicines or Methods be what they will, that controul it, would have carried on the Salivation, and anſwered this Point, as it did in the firſt Stage of the Diſeaſe, when the Inflammation being abated, the Puſtules roſe higher, and ſuppurated with kinder Matter.

Authors, who have wrote ſince, as they have ſaid nothing worth our Notice, but what they have gleaned, and generally miſapplied, from the Writers I have already mentioned, we ſhall paſs over in Silence; and come to the Hiſtory of this kind of univerſal Diſeaſe.

The Small Pox, in general, is of the inflammatory Kind, having all the Signs in common with other Inflammations; but in Species it differs eſſentially from all theſe Diſeaſes. But in order to prove that it is an Inflammation, it will be proper here to determine the true Signification of the Word *Inflammation*, by giving as clear a Notion of it as the Nature of the Thing requires: Beſides, it will be neceſſary to lay this down as a kind of Theorem, agreeable to the Cuſtom of Mathematicians; becauſe, when we have a perfect Notion of an Inflammation in general, we ſhall then proceed, by way of Analogy, to treat of the Nature and Cure of this particular Species of inflammatory Fever.

A Tumor, from whatever Cauſe, that ariſes upon an human Body, attended with Pain, Pulſation, Heat; the Part being, alſo, diſcoloured; the Blood, at the ſame time, fixed; the Urine generally higher coloured; the Pulſe quicker than ordinary, and often harder: Theſe Symptoms ariſing ſtill higher, ſuch a Tumor, if not oppoſed, paſſes on to Matter, or ends in Sphacelation, which is an entire Corruption of the Part affected: Such a Tumor is called by Surgeons *Phlegmonous*, a Term imported into our *Engliſh* Tongue, that ſignifies burning or inflammatory. As there is always a Fever attending the Progreſs of ſuch Tumors, ſuch Fevers are called *inflammatory*; and as the Blood is always fixed, in proportion to the State of ſuch Tumors, ſuch Blood may be properly called *inflammatory*. And as the Blood is one of the moſt diſtinguiſhing Signs of an Inflammation, it will be proper to ſhew the various Changes in this vital Fluid, during the Courſe of ſuch Tumors. Whether a Tumor ariſes from a Contuſion, fractured Bones, from the Poiſon of Serpents, from Contagion, or from whatever internal or external Quality or Cauſe, the Moment it begins to be formed, that Moment the Blood begins to be changed. If ten thouſand Men were let Blood, and not one of them had the leaſt Appearance of Size in their Blood, and preſently after, if ſome Cauſe or other ſhould produce an inflammatory Tumor, the Blood ſoon becomes fixed, and, as that Tumor haſtens on to Matter, or Sphacelation, that Size increaſes according to the Progreſs and State of the Tumor: So that in the time of Suppuration, the Size of the Blood will be more in Quantity than it was the Day before; and more that Day than the firſt of its Beginning. But, in a State of Mortification, the Quantity of the Size will ſtill be in proportion equal to that calamitous State of an Inflammation. As to the Colour of the Size, there is, alſo, ſomething neceſſary to be obſerved: The yellow Colour ſhews more of Heat, or Fire, or Inflammation, than the pale; the green, more than the yellow; and the dark, more than any. The Conſiſtence of the Size, which is always upon the Surface of the *Craſſamentum*, or Cake, which ſwims in the Serum, the more viſcid and tenacious, the leſs Fire; the more diſſolved (which ſometimes is like a Jelly half boiled) infinitely the more Danger: For when it is thus in a State of Diſſolution, the Parts inflamed always mortify; and, when it is in this State, the inferior Parts of the *Craſſamentum* are a black putrid Gore, and, alſo, in a State of Diſſolution. What I have here ſaid, with reſpect to the Blood, is the Reſult of above a thouſand Obſervations, on all Kinds of Inflammations in general.

This is the cleareſt Notion I am able to give of an Inflammation; and I may venture to ſay, is what may be the moſt certainly known in the whole Practice of Phyſic. I have fixed this, as it were a Baſis, to build the whole Superſtructure upon; and what I thought abſolutely neceſſary, becauſe I ſhall have perpetual Recourſe to it, in order to prove what I am about to treat of.

The Small Pox, then, anſwers, in general, to theſe Signs of an Inflammation; and, therefore, ought to be looked upon, and treated, in general, as ſuch: But as it differs, alſo, ſpecifically from all other Diſeaſes, it, alſo, requires a particular Hiſtory, and Method of Cure.

The Small Pox being an inflammatory Diſeaſe, it is certain that the Body muſt be diſpoſed to receive an Inflammation; and whatever Cauſe hath Power to produce an Inflammation, may poſſibly produce this Species of it. The Diſeaſe, then, may be produced from violent Exerciſe, Change of Air, particular Climates, drinking ſpirituous Liquors: For thoſe Cauſes productive of Inflammations, in ſuch as have had the Diſtemper, alſo, produce the Small Pox inſtead of ſuch Inflammations in thoſe who have not had this Diſtemper: Hiſtory proves this to be true; and daily Obſervation ſtill confirms it the more. Who has not obſerved, that, upon hard Drinking, upon Change of Air, upon violent Exerciſe, People have fallen into the Small Pox, Pleuriſies, Quinſeys, or other Inflammations? But why theſe Cauſes ſhould produce the Small Pox in ſome Subjects, and not in others, is, I muſt confeſs, as yet inexplicable to me; and will, perhaps, be for ever a Secret to others. When there is ſome particular Conſtitution of Air producing Inflammations, in general, it, alſo, produces the Small Pox at thoſe Seaſons; and as theſe are epidemical, ſo are, alſo, thoſe: This explains the Reaſon, why the Small Pox begins at thoſe Times of the Year, which the Phyſicians call *an irregular Seaſon*; I mean in the Winter, the very Beginning of the Spring, or even in the Autumn; for we ſhould naturally expect it from the Middle of the Spring to the latter End of the Summer; for, at this Seaſon of the Year, we obſerve Fevers to be generally of the inflammatory Kind. In thoſe Countries where the Plague, and malignant Fevers, are ſtationary, according to the Climate and Diſpoſition of the Air in thoſe Countries, we obſerve

ſerve the Small Pox to be, alſo, epidemical, and generally fatal. And, perhaps, under the Appearance of the Small Pox, they ſometimes have the Plague.

Sydenham obſerved this in our own Kingdom; and *Proſper Alpinus*, in *Egypt*. We have had many Phyſicians, who have laboured to ſolve the Phenomena, and to ſhew what there is in Man which diſpoſes him to the Infection of this Diſeaſe, which, when he has once had it, returns no more. *Fuller*, *Drake*, *Helvetius*, and many more, have ventured to aſſign ſuch phyſical and mechanical Reaſons, that, out of pure Reſpect to their Characters, I am even aſhamed to mention. And what they have ſaid, with reſpect to the morbific Matter, ſeems, in my Opinion, to be juſt as much to the Purpoſe. What we have here taken Notice of, enables us to prognoſticate, what Seaſons, and what Conſtitutions, are moſt probable to produce this Diſeaſe, and to whom the Small Pox is generally moſt fatal.

Since every Perſon in the World that is ſeized with the Small Pox, although his Blood was not inflamed before, muſt neceſſarily now undergo a State of Inflammation; and which generally begins to appear ſo upon the ſecond or third Day; therefore, all ſuch as are of an inflammatory Habit of Body, whether hereditary or acquired, muſt, of conſequence, be diſpoſed to have this Malady in an higher Degree than thoſe of a contrary Diſpoſition. Such People, who labour under any inflammatory Diſeaſe, muſt, of courſe, be ſtill in greater Danger; becauſe, if the Small Pox ſeizes upon ſuch, before ſuch Maladies are ſpent, they muſt expect the moſt fatal Sort, becauſe then, the Patients muſt ſtruggle with two Diſeaſes; the former, and the Small Pox, both at the ſame time: For upon the ſecond or third Day, the Blood, that was inflamed by the preceding Diſeaſe, now begins to acquire another Degree of Inflammation, peculiar to the Small Pox, which will then be as Fire added to Fire. But there are ſome again, in more danger on account of the Parts of the Body, that were before in a State of Inflammation before the Small Pox begins, that is, ſuch whoſe Lungs or Brain, or Throat, are particularly inflamed, when this Malady firſt ſeizes: For as no Perſon dies of an Inflammation, till the Throat, Lungs, or Brain become affected; and, as no Perſon paſſes through the Small Pox, without theſe noble Parts being, in a moſt particular manner, inflamed more or leſs, ſo ſuch muſt be expoſed to the greateſt Danger, ſince, beſides undergoing the Small Pox, they muſt, alſo, undergo at the ſame time, a true Peripneumony, a true Quinſey, or a true Phrenſy; that is, they will have the Small Pox complicated with an Inflammation of the Throat, Lungs, or Brain. And I believe no one ever died of the Small Pox, but of one or other of theſe Diſeaſes.

In the latter Stages of Life, or in ſuch Conſtitutions, with whom Contuſions, Fractures, Diſlocations, and Ulcers, are more ſubject to inflame; in theſe, phlegmonous Tumors are more difficult to reſolve; which, of conſequence, proves, that in ſuch the Small Pox muſt be raiſed to an high Degree: Therefore, Women, before the Menſes are over, have it more favourable than after; Women, than Men; and Children, than Men or Women: And this is ſo, generally ſpeaking; not but particular Caſes are Exceptions to this Rule.

Occupations of Life, attended with Labour, as Watching, Fatigue, Encampments, Sieges, bad Air, Diet, or whatever Accidents attending War, provided they excite Heat, inflame. If the Small Pox ſeizes at ſuch times, and ſuch Conſtitutions, it muſt be of a bad Kind. Such Seaſons of the Year, ſuch Climates, ſuch Diſpoſitions of Air, producing malignant Fevers; if the Small Pox comes on at ſuch Times, in ſuch Climates, it always runs very high.

Sydenham, as I ſaid before, obſerved, that to thoſe who had the Small Pox during the Years 1639 and 1669, when malignant Fevers raged in *London*, it was very fatal. And *Proſper Alpinus* ſays, that, in *Grand Cairo*, in *Egypt*, during the time of the Year, when the Plague rages in that populous City, the Small Pox is commonly attended with purple and livid Spots, emulating even the Plague in Degree of Inflammation and Putrefaction. From hence we may certainly conclude, that all ſuch People who are ſubject to Diſeaſes, not attended with fixed and inflamed Blood, ſuch as the aguiſh, hyſterical, or flatulent Conſtitutions; thoſe who have ſuffered the Loſs of much Blood, either from Wounds, the Menſes, Hæmorrhoids, Miſcarriages; or thoſe whoſe Blood is impoveriſhed by too low a Diet, can never have the Small Pox to an high Degree, provided ſuch Cauſes juſt precede the Diſeaſe. We ſhall now ſhew the Signs and State of the Diſeaſe which precede the Eruption.

The Fever preceding the Eruption we will call *variolous*, (for, till the Eruption appears, it cannot properly be called the *Small Pox*), ariſing from ſome Infection, communicated by the Air, or the Touch of a variolous Subject, Fear, or ſome other Cauſe, which hath Power to produce this Species of Inflammation, which begins generally with Shiverings, Rigors, Paleneſs of the Lips, Lividneſs of the Nails, with other inflammatory Symptoms. Sometimes this Diſeaſe ariſes by way of Revolution, from ſome other Diſeaſe to this, as a common Cold, a ſlight Pleuriſy, or Quinſey, the Meaſles, the Chicken Pox: And if it comes on before theſe Diſeaſes have ſpent themſelves, yet are we able to diſtinguiſh the Origin of the variolous Fever: Suppoſe a Perſon ſome Days ill of ſome one or other of theſe preceding Maladies, notwithſtanding the uſual Symptoms peculiar to theſe continuing, eſpecially Heat, and a feveriſh quick Pulſe, the Patient is ſuddenly ſeized with Shiverings, Rigors, or a violent cold Fit, like an Ague, the Lips and Nails are pale or livid; and although the Hands and Feet are extremely cold and chilled, yet is the Pulſe, although quick before, now become much more ſo, inſomuch that we might plainly perceive the Addition of a new Fever. Theſe following Symptoms preſage a future Eruption of the Small Pox; Headach, Laſſitude, the Limbs cramped, painful, heavy; the Patient is thirſty, extremely ſick, or vomits; if Women or Children, the Matter thrown up is generally green, reſembling an hyſteric Caſe; the Eyes glaring, the Lids edged round with an Inflammation, reſembling a Perſon who had drank much, unable to bear the Light; the Face glowing, great Heat and Dryneſs over the whole Body, Coſtiveneſs. But if the Inflammation runs very high, the Patient purges; the Stools are generally dark and fetid; Pains in the Small of the Back, acroſs the Loins, and an unuſual Weight; Oppreſſion at the Pit of the Stomach. Theſe laſt Symptoms, when attended with Nauſeas, with a drowſy ſoporiferous Aſpect, are the moſt diſtinguiſhing Signs, which Signs Phyſicians call *Pathognomonic*, diſtinguiſhing eſſentially this variolous Fever from all others; unleſs we except the Meaſles and Chicken Pox, where indeed the Symptoms are ſomewhat equivocal: But the Violence and particular Duration of theſe Symptoms will always diſtinguiſh the Small Pox from theſe.

There is one Symptom yet, which *Sydenham* obſerved, but that is peculiar to Children, I mean, a Convulſion Fit; but an extraordinary Drowſineſs muſt precede the Fit, and a more than ordinary Luſtre in the Eyes; ſuch a Fit announces the Eruption to be near at hand. During the variolous Fever, if the Patient is inclined to ſweat, it rather preſages the diſtinct Kind. But we are not to depend too much on this Symptom; for the confluent Kind hath ſometimes followed.

Theſe are the Symptoms which precede the Eruption, and, alſo, continue increaſing, and riſing higher, till the Small Pox be, in a manner, entirely out; and the Pulſe is remarkably quicker the laſt Day but one of the Eruption, than at any other time.

There is no Diſeaſe demands ſo much of the Phyſician's Attention, in obſerving the Time, Circumſtances, and peculiar Stages, ſo remarkable as they really are in the Small Pox. Hence the moſt certain Indications ariſe, pointing out when we are to act, and when we are not. From hence we, alſo, may attain to a degree of Knowledge, ſo as to prognoſticate either the Life or Death of the Patient.

The time of its firſt Appearance is, of all, the moſt important, and, therefore, firſt to be well conſider'd; and as it is a Point of the greateſt Moment, I wonder Authors have been ſo looſe in the Calculation of the Time. If the Small Pox appears the firſt Day of Sickneſs, it is mortal; if on the ſecond, not much ſafer; if on the third, dangerous; if on the fourth, or a little later, the Small Pox is generally of the *diſtinct* Sort, and without Danger. The ſumming up, and dating the Time of the Eruption, we will illuſtrate, by this Example.

A Man is ſeiz'd with a variolous Fever at three, five, ſix, or eight in the Morning, at Noon, or at ſix at Night, or at any time between twelve in the Morning and twelve at Night; the Day conſiſting of twenty-four Hours, or a natural Day. If the Small Pox begins to appear at Ten at Night, and the Patient ſicken'd at Three, Five, or Eight, in the Morning, Phyſicians ſay, the Small Pox came out the firſt Day; but if the Patient ſicken'd at Noon, Six in the Evening, or Eleven at Night, and the Small Pox begins to appear at Six the next Morning, at Noon, or at Eleven at Night, Phyſicians ſay, it broke out upon the ſecond Day. If the Patient ſickens, for Example, *April* 1. at Three in the Morning, Six in the Evening, or Eleven at Night, and the Small Pox appears *April* 3. at One in the Morning, Four in the Afternoon, or Ten at Night, they ſtill ſay, the Small Pox came out on the third Day. If a Patient ſickens on *Monday* Morning at Two, One in the Afternoon, or Eleven at Night, and the Small Pox makes its Appearance on *Thurſday*, about Two in the Morning, Five in the Afternoon, or Ten or Eleven at Night, we fix the Eruption to the fourth Day. Any one may ſee how looſe and equivocal theſe Calculations, hitherto eſtabliſh'd by Phyſicians, are. Hence, their not having fix'd the Time of the Eruption exactly enough, has been the Occaſion of the prognoſticating the Small Pox to be a kind Sort, when it was not; to be the *confluent*, when

when ſometimes it happen'd to be the *diſtinct*: And as, therefore, fixing the Time of Eruption with great Preciſion, is one of the greateſt and moſt certain Indications in our Practice, the Omiſſion of this hath too often been the Occaſion of fatal Miſtakes in Practice: Let us now ſhew the Incertitude of this rambling Method of reckoning the Eruption, and eſtabliſh as exact an Account of the Time of the Eruption, as the Nature of the Thing will bear. In order to this, we muſt come to a Calculation by Hours.

A Patient ſickens at Two in the Morning; the Small Pox appears at Eleven at Night; it comes out the firſt Day, the Patient having been ſick twenty-one Hours, and no more, before the Eruption: Suppoſe, again, he ſicken'd at Six in the Evening, and the next Morning it appear'd at Five; Phyſicians will tell you, it came out on the ſecond Day; yet the Patient, all the while, was only ſick eleven Hours before the Erup ion; and, conſequently, the Eruption appear'd ſooner by ten Hours, in this Caſe, than in the other; which Caſe was call'd Eruption on the firſt Day. Again, a Man is ſeiz'd with the Small Pox about Eleven, for Example, on *Monday* Night; it makes its Appearance on *Wedneſday* Morning, about Two; the Small Pox, in the common way of reckoning, appear'd on the third Day; yet, after all, the Perſon was ill of the variolous Fever but three Hours above one natural Day. Suppoſe one ſicken'd of the Small Pox at Two on *Tueſday* Morning, and it made its Appearance on *Thurſday* Night at Eleven, it is ſaid to come out on the third Day; in this Caſe, the Patient labours under a variolous Fever the Space of ſixty-nine Hours, in the former only twenty-ſeven Hours; and, conſequently, there is forty-two Hours Difference: We may from hence conclude, how uncertainly Phyſicians muſt prognoſticate from ſuch an erroneous manner of calculating the Time of the Eruption.

Let us fix this as a Truth in general, to be regarded, that by how much the later the Small Pox makes its Appearance, by ſo much the kinder, and more diſtinct; and that the former manner, of calculating by Days, is too equivocal to be depended upon: We will, alſo, fix upon this for ſuch a Compaſs of time, to be call'd late or early: If the Small Pox makes its Appearance before the firſt twenty-four Hours of Illneſs are expir'd, we are to expect the Diſeaſe to prove as fatal as the Plague: If from thirty to thirty-five Hours after the firſt Illneſs, extremely dangerous: After forty, to forty-ſeven or forty-eight Hours, leſs ſo, but rather the Flux Sort, than not: If it appear after ſeventy to eighty Hours, commonly the *diſtinct* Sort.

Having now fix'd the Time of the Eruption, and ſhewn the Signs or Symptoms which precede this Stage; we ſhall now give a Hiſtory of the Signs and Symptoms attending the whole Courſe of the Eruption. According to the Violence of the variolous Fever, the Eruptions appear ſooner or later, and they are of the *diſtinct* or the *confluent* Kind; that is, they are more or leſs in Number; or they are ſo few, that they are ſcatter'd over the Body, like ſo many Grains of Corn ſown and ſpringing up diſtinct from each other; or, otherwiſe, in Heaps, or Cluſters, the Roots being entangled together. Now the Small Pox, in the thick Sort, when they firſt appear, are extremely ſmall; but, as they grow, their Baſes enlarge; ſo that, as theſe ſpread, ſeveral Pimples, that were diſtinct Yeſterday, To-day become complicated; as ſo many ſmall Grains of Quickſilver ſtrew'd thick upon a Table, if each Globule was to ſwell and extend, they muſt run into one another. After this manner, we ſay, the Small Pox runs together; hence we call it the *diſtinct* Sort, or the *confluent*; and as it is impoſſible for a very great Number of theſe Puſtules to be upon the Body, without running together, becauſe they are all in a State of growing and extending at the Baſis, after four or five Days, they muſt take up greater Spaces: We may conclude, then, the Fluxing is but the Effect of the Number of the Eruptions. But there is, indeed, ſomething here worthy a Diſtinction (for I think we cannot be too exact in the Deſcription of this Diſeaſe); although we are principally to depend on the Number of the Puſtules, yet the Diſtribution of them over the Body deſerves ſome Attention: In one Subject there may be a greater Number of Eruptions, and thoſe, by their Situation, diſtinct from each other; in another Caſe fewer, and yet they run together, are complicated, or flux, *viz.* as, in the Field ſown by a ſkilful Farmer, a greater Quantity of Wheat ariſes diſtinct; in that ſown careleſly, and in Heaps, it ariſes in Parcels entangled and matted together, with great Spaces between. Now ſhould the Small Pox on the Face, or Body, appear in this *confluent* manner, it ſhould be call'd the flux Sort. It is of much Importance what Parts of the Body are infected more or leſs: The Small Pox fluxing upon the Face and Head, although the other Parts of the Body were exempt from the Diſeaſe, yet is the Caſe not without Danger: But if the Face be entirely cover'd, and the Body too, the Danger muſt be ſtill the greater. We are not to be ſurpris'd at the Danger being greater, when the Face and Head are principally affected; becauſe all Phyſicians very well know, that a Turgency of the Veſſels about the Brain muſt give us juſt Cauſe to fear a fatal Event.

Having thus given an Idea of what the *diſtinct* and *confluent* Sorts are, let us trace and deſcribe theſe Eruptions from their firſt Appearance, till they are entirely out, and ſpread over the whole Body. This Period of Time, hitherto, has been ſaid to take up the Space of three Days; but this demands as ſcrupulous an Inquiry as the variolous Fever did: For Example, the Eruptions begin to appear this Day at Three in the Morning; Phyſicians tell you, they will be all come out on the third Day, dating the firſt Day of their beginning to maturate, the fourth Day after the Appearance of the Small Pox; they, therefore, allow three Days for the Eruption.

The following Example will ſufficiently ſhew the Fallacy of this way of calculating, as well as the Neceſſity of a more exact Hiſtory of the Breaking-out of the Pox: Suppoſe a Phyſician attends a Patient on *Monday* Night, about Eleven of the Clock, and diſcovers the Small Pox juſt appearing; he returns again on *Wedneſday*, no matter what Hour, whether in the Morning, or Eleven at Night; he declares the Eruption entirely over, aſſigning this Reaſon, it appear'd on *Monday*; and this being the third Day, the Eruption muſt be complete. How equivocal is this, as to Time? As if the Appearance of the Small Pox at One in the Morning, Two in the Afternoon, or Eleven at Night, his viſiting on *Wedneſday*, early in the Morning, or late at Night, made no Difference! when it is viſible that there may be even twenty-three Hours taken out of the firſt Day, and as many out of the third Day, which, together, make up forty-ſix Hours: Therefore their aſſerting, that the Small Pox is three Days in coming out, concludes as equivocally, as to Time, as if ſeventy-two Hours and twenty-ſix Hours diffe'd not at all. Now there is nothing more uncertain, or, rather, impoſſible, than to fix one certain Period of time for the Eruption; becauſe it is an Effect flowing from a peculiar Cauſe, which varies perpetually, and therefore the Eruption muſt vary accordingly. An inflammatory Fever is that Cauſe which runs higher, or not, and acts with more Force in one Conſtitution than another. A Man may, with as much Propriety, aſk how long it will be before this Tree buds, when it will bloſſom, or the Fruit ripen? And although there muſt be neceſſarily a certain time, yet that time will vary, and be circumſcrib'd, according to the Climate it flouriſhes in, and the Soil that nouriſhes it, added to the Culture and Skill of the Gardener. As the Violence of the variolous Fever caus'd the Eruption of the Puſtules ſooner or later, according to the Degree of its Inflammation; ſo the ſame Cauſe either forces it out by Degrees, or ſuddenly: Thus ſome little hard Pimples appear on the Forehead, Noſe, Cheeks, then upon the Breaſt, the Hips, Thighs, over the Trunk of the Body, and, laſt of all, upon the Legs, eſpecially about the Feet: Or this Cauſe acts with more Energy; and than they break out over the whole Body, like a Raſh; or the Fever being rais'd to an immenſe Degree, either from ſome peculiar Habit of Body, peſtiferous Air, or hot Medicines, and then the reverſe appears, the Pimples are few in Appearance, rather a Bluſh upon the Face, the Skin arid and dry, and, upon a cloſer Inſpection, there appear Numbers ſticking in the Skin, unable to break forth; purple or livid Spots are ſprinkled over the Body, but more about the Breaſt, Neck, Loins, and Hips, than any-where elſe: The Patient often makes bloody Water, and theſe two laſt Symptoms may be foretold by another Symptom, which is this, an exceſſive Pain acroſs the Small of the Back.

As the Fever is higher in ſome Conſtitutions than others, and therefore occaſions the Appearance of the Small Pox ſooner or later; ſo, alſo, there are ſome Parts of the Body where this Inflammation exerts itſelf with greater Force, which is the Occaſion of the Eruptions appearing ſooner or later, in greater Numbers, or not, according to the Situation of that Fire, or Inflammation. We can compare the Time and Courſe of the Eruption to nothing more aptly, than to a Field ſown with Corn; although ſown at the ſame time, yet the Grain comes up, or is retarded, ripens, or is backward, according to the Situation, the Soil, or Manure, of the different Parts of the Field.

The fixing the Courſe of the Eruption to three Days, indiſcriminately, in all Conſtitutions, as hath been done hitherto, is, for the Reaſons I have given, without any ſolid Foundation; but, nevertheleſs, there is a certain Period of time neceſſary for an entire Eruption: Yet that varies, according to the Force of the Fever, and which Time, alſo, may be calculated: But, certainly, ſuch Calculation, by Days, would render this Part of the Hiſtory of the Small Pox as obſcure, and equivocal, as Phyſicians have been in calculating that Period of time from the firſt Attack of the variolous Fever, to the firſt Appearance of the Small Pox.

In the *confluent* Sort, we may look upon the Eruption to be entirely over between the fifth and the ſixth Day, counting from the firſt Day of Sickneſs; the *diſtinct* Sort demands ſix

natural Days. We muſt expect ſome Caſes where the Small Pox is retarded, or a new Eruption added to the former, occaſion'd by ſome Accidents, or improper or raſh Methods purſu'd. The Fever, and other variolous Symptoms, which ran very high before the Eruption, and, riſing with greater Violence till the midſt of the Eruption, now begin to relax, and entirely abate upon the total Eruption of the Pock, I mean in the *diſtinct* Sort, and ought, alſo, to be ſo in the *confluent*, if the Phyſician does his Duty. The Equality of the Pulſe, upon the ſixth Day, reſembling that of Health, will be the diſtinguiſhing Sign of this ſecond Stage, which may be look'd upon as the moſt remarkable Stage in the Small Pox: Here, then, is a Pauſe; the Patient ſeems to reſt, for a time; he is eaſy; the firſt Fever, which was without Intermiſſion, ceaſes now, and is the only time of Intermiſſion Nature has allotted, till the Diſeaſe be entirely over; it may be look'd upon as a Calm between two Storms; but this Calm precedes the moſt violent Storm, which is to come: The Patient repoſes thus for ſix, ten, or twenty Hours; and then, ſooner or later, according to the Violence of the Diſeaſe, all on a ſudden, the ſecondary Fever comes on, by ſlow Degrees, if it be a benign Sort; or it burſts out, like a Hurricane, if the Inflammation be high; the Eyes becoming ſuddenly bloodſhot, or ſtreaming with Water; the Pulſe quick; the Throat ſore; the Urine crude, pale, or of a Straw-colour; the Patient, agitated with great Reſtleſſneſs and Inquietude, burning with Heat, ſtarts from the Bed; unable to bear Confinement, he ſeeks the Air; endeavours all he can to free himſelf from this ardent Heat; he becomes delirious, and often even phrenetic.

This laſt Symptom is the moſt violent during the Courſe of the Diſeaſe, as well as the moſt obſtinate: The ſecondary Fever, which is the Fever of Maturation, begins, as I have ſaid, about the ſixth or ſeventh Day; and, according to the Violence and State of the Inflammation, the ſeveral Eruptions begin to ſpread, grow redder, riſe with a Point, elevated or depreſs'd; they haſten on to Matter ſooner or later; the Matter is benign, well-concocted, or ſanious, or full of Water, like a Bliſter rais'd by Fire; they bleed; or, laſtly, if the Inflammation be carried to the higheſt Degree, theſe ſmall Tumors, or Eruptions, paſs beyond the State of Suppuration; they are burnt at top, as if ſear'd with an Iron; the Skin, or Spaces between the Cluſters, is no longer florid, of a Roſe-colour, but dark, purpled, or black, or cover'd over with innumerable ſmall Pimples, or eryſipelatous; the Skin arid, ſtretch'd, or diſtended, like a Piece of Parchment; or a conſiderable Tumor ariſes, cover'd over with Numbers of the Eruptions, reſembling a true Anthrax, or peſtiferous Boil. No Wonder *Sydenham* call'd every Eruption a phlegmonous Tumor, ſince, moſt certainly, it is ſo; and all the Phenomena correſpond, in every Degree, with a Tumor of that Species.

The Eruptions in the Small Pox ariſe, take their Courſe, and are ſubject to all the Variations, ſeveral Appearances, and Terminations, agreeable to all common inflammatory Tumors in general: Now all theſe Changes and Variations are purely the Effects of the Cauſe I mention'd before; the Fervor, Inflammation, or Fire of this Fever.

Phyſicians, not apprehending that an Inflammation was the Cauſe of the ſeveral Changes and Appearances of the Symptoms in this Diſeaſe, and not diſcovering that ſuch *Phænomena* only ſhew'd that the Diſeaſe differ'd more or leſs, as to Heat, Inflammation, or Fire, but differ'd not at all in Nature or Kind, divided the Small Pox, as it were, into different Diſeaſes: For Inſtance, *Helvetius* diſtinguiſhes many Kinds of this Diſeaſe; one, whilſt they have a Spotted Fever attending; another, a Quinſey, or an Intermittent, *&c.* Their not knowing the Nature of the Small Pox, but dividing it eſſentially into different Claſſes, their conceiving a Complication of Diſeaſes with the Small Pox, differing eſſentially from it, led them to a Practice extremely dangerous, and often, I fear, fatal: But, above all, they err'd moſt in not diſtinguiſhing the Nature of the Small Pox: For although many knew this Diſeaſe to be an Inflammation, yet, led by ſome Hypotheſis or other, they conſider'd a Pleuriſy, or Quinſey, as Diſeaſes differing in Kind from that of the Small Pox; and this one Example of their Practice proves the Fallacy of their Theory, as well as the Danger of their Practice. Let one of theſe Phyſicians attend a Patient in the Small Pox, complicated with an Inflammation of the Throat, Lungs, or Pleura; if the Small Pox be paſt the Eruption, would they venture to cure that Inflammation of the Lungs, or Pleura, by the uſual means? No, they dare not: For ſhould they bleed, or purge, they imagine the morbid Matter, peculiar to the Small Pox, would be ſtruck in from the Circumference to the nobler Parts; which is a Demonſtration, that they are entirely ignorant of the Nature of the Diſeaſe.

The Small Pox, in its Nature, then, is wholly of the inflammatory Kind, and can only differ, according to the ſeveral Conſtitutions, Air, and Climate, of People: Wherefore we will go on with a Hiſtory of this Diſeaſe, conſidering all the Accidents and different Appearances of this Diſtemper, as the Effect of more or leſs of the Degree of Inflammation, in the ſame manner as if we were treating of a Pleuriſy, or common Tumor. We do not ſay theſe differ in any other manner than this: If the Inflammation be very high, ſuch a Tumor will be hard to reſolve; and thoſe Tumors which are hard to reſolve, rather incline to mortify, than ſuppurate kindly. Upon this Foundation, and no other, I ſhall go on to deſcribe the Small Pox, and attempt the Method of Cure. I ſhall conſider every Puſtule as a common inflammatory Tumor, ſubject to all theſe ſeveral Stages, in common with ſuch Inflammations, which are all the Diſtinctions this Diſeaſe admits of.

Now we are got to the total Eruption of the Small Pox, from henceforth we are to look upon the Progreſs of the Eruptions, and their ſeveral Changes and Appearances, as the moſt diſtinguiſhing and pathognomonic Signs, enabling us to preſage either a fortunate or fatal Event.

Let us firſt deſcribe the *diſtinct* Sort, where the Inflammation is not high, where the Eruptions paſs gradually to a proper State of Maturation. As, even in this, they make their Appearance not all at the ſame time, ſo they riſe, and go on to Suppuration, in the ſame Order, and Succeſſion of Time: So thoſe on the Face neceſſarily are ripe two or three Days before thoſe on the Feet. When they come to the higheſt State of Maturation, they begin to dry, and therefore muſt begin to ſink, of courſe; thoſe on the Face come to this State about the ninth or tenth Day, dating the time from the firſt Day of Sickneſs; of courſe, thoſe about the Feet and Legs arrive not to that State till the eleventh, twelfth, or thirteenth Day. What, then, have Authors hitherto meant, in fixing the Turn to one certain Day? When, it is viſible, the Small Pox is as long in turning, as in coming out. That Period of the Diſeaſe, call'd the Turn, is a Point of the higheſt Importance, becauſe it is, at that time, thoſe who periſh by the Small Pox generally die, unleſs it be when bloody Urine is made, and then they generally die on the ſeventh Day; but the Turn of the Small Pox cannot be limited to any one Day, unleſs they all made their Appearance on the ſame Day; here is another Circumſtance which alters the Turn, and makes it impoſſible to fix this Change to a certain Day, any more than they could the Day of the Eruption: For the Eruption appears ſooner or later, as the Fever is more or leſs violent; ſo, alſo, the Eruptions turn ſooner or later, according to the Force of the Inflammation.

The Order, and ſeveral Stages, of theſe Eruptions, through which they paſs, will be beſt underſtood by the following Deſcription, which will illuſtrate that Period of the Small Pox call'd the *Change*, a Time more equivocally and uncertainly deſcrib'd than any other Stage of the Diſeaſe. To do this, we muſt deſcribe the Courſe of one ſingle Eruption; for it would be impoſſible to deſcribe the Whole at the ſame time, becauſe ſome are juſt appearing, when others begin to maturate; ſome in the higheſt State of Maturation, while others are drying; theſe drying, and others are ſcabbing, and falling away.

Firſt, they are ſmall, upon the Eruption, red, watery, and hard; to be felt, rather than ſeen; the pathognomonic Diſtinction, with reſpect to the Meaſles, which are an Efflorescence. It grows larger, riſes ſharper, and ſpreads at the Baſis, making ſo little a Progreſs for two or three Days, that one would ſcarcely think it would ever come to any thing; but, on the fourth Day after its firſt Appearance, it begins to look white, is much larger, but often depreſs'd, and flattiſh at the Top: It grows now larger, whiter, and very much inflam'd at the Bottom; the Skin round it, for ſome Diſtance, is extremely florid, like a red Roſe-leaf: The Matter now ſeems to be perfect Pus, but white and thin, and this in ſix Days from its firſt Appearance; it is then ſwell'd, and comes to the higheſt State of Inflammation: The Matter now begins to grow thicker, and ſomething yellower, and that in the middle of the Puſtule; and, at laſt, thickens into a yelloviſh Scab, the Inflammation ſtill continuing about the Baſis of the Eruption; and this, alſo, takes up about three Days time; and, when it is thus ſcab'd, the Puſtule can be no longer in a State of Inflammation; and, of courſe, the Swelling ſubſides, which puts a Period to the Diſeaſe.

The ſecondary Fever, that began with the Maturation of the Eruption, riſes gradually, and is a concomitant Symptom with the ſeveral Stages of the Puſtules, as the Puſtules are of the Fever. We are but to ſuppoſe all the Eruptions, in any particular Caſe, to reſemble this I have deſcrib'd, and we have an Idea of a diſtinct and kind Sort.

In ſuch a diſtinct Sort as this, the ſecondary Fever ariſing about the ſeventh Day, the Small Pox, alſo, beginning to fill at the ſame time, the Fever ſtill increaſing as the Eruptions go on to Maturation, the Fever, of conſequence, will be rais'd to the higheſt Degree at that time the greateſt Number of the

Eruptions

Eruptions are at the higheſt State of Maturation: So that if all the Eruptions of the Body were to come out at one and the ſame time, and all the ſeveral Parts of the Body were of equal Heat and Warmth, the Puſtules would then, on the ninth Day, be all in the higheſt State of Maturation; that is, they would begin to dry all at the ſame time, and we could then fix the Turn not only to one certain Day; but, as it happens quite otherwiſe, we cannot fix the Time of the Turn to ſuch or ſuch a Day, much leſs ſuch an Hour of a Day, as ſome pretend to do. As the Small Pox even takes up two or three Days in coming out on the Face, ſo ſome of theſe begin to turn two or three Days before others do; henceforth I would lay down this as a Maxim; as ſoon as ever any of the Eruptions begin to dry, I ſay, the Small Pox begins to turn, and that the Turn of the Small Pox continues two, three, or four Days; and that the Height of the Turn will be about a Day and a half after the Beginning of the Turn; and at this time the Fever aſcends to the higheſt Pitch.

From the Hiſtory I have now given of the *diſtinct* Kind, we find ourſelves no longer puzzled about fixing the Time of the Turn, even in the *confluent* Kind, or the Time of its Eruption: For as the Eruption takes up two or three Days, ſo, alſo, does the Turn: But the Eruption, the Maturation, and Turn, are all controul'd and govern'd by the Inflammation, Fire, or Heat, peculiar to the Conſtitution, as will be illuſtrated by the Hiſtory of the *confluent* Kind.

Let us now deſcribe the *confluent* Sort, and by it will be ſhewn all the Variations, Changes, and Diſtinctions, peculiar to the Small Pox in general.

The Fever not running very high, yet high enough to produce the *confluent* Sort, the Symptoms attending this Stage of Maturation, in that Caſe, with reſpect to the Eruptions and the Fever, reſemble, exactly, thoſe of the *diſtinct* Sort, (only they begin to turn rather ſooner on the Face, becauſe the Fever, or Inflammation, was ſomething higher; but they take up a much longer time in turning, becauſe there are a much greater Number of the Eruptions) if we except a Looſeneſs in Children, and the Spitting in grown People.

Spitting, or Salivation, is the moſt extraordinary Symptom: It begins, generally, with the ſecondary Fever, and, ſometimes, before the Eruption be over: It is more fluid, and copious, the firſt two or three Days, than afterwards; for as Maturation goes on, the Fever, alſo, aſcending, the Spittle becomes thicker, more viſcid, decreaſing daily; but if the ſecondary Fever be carried immenſely high, the Spitting ceaſes, and the Patient dies: But if the Fever of Maturation becomes not higher than neceſſary to produce a laudable and kind Suppuration, the Spitting goes on to the thirteenth, fourteenth, fifteenth, and, ſometimes, to the twentieth Day; that is, till the Small Pox is entirely dry over the whole Body.

It will be neceſſary here to give three diſtinct Hiſtories of three different Subjects labouring under this Diſeaſe, from the coming on of the ſecondary Fever; as, alſo, the Beginning, Progreſs, State, and Declenſion, of the Eruption.

The firſt ſhews the kind and *diſtinct* Sort; the ſecond a benign, but flux'd Pox; the third the flux'd or *confluent*, the moſt fatal; with all the ſeveral Accidents and Variations this Diſeaſe admits of.

About the ſixth Day of the Diſeaſe, in the *diſtinct* Sort, the ſecondary Fever comes on; the Pulſe begins to quicken, and becomes harder; the Face begins to look more florid and red, the Urine ſomething higher colour'd than natural, with a Cloud ſuſpended in the Middle, or ſubſiding to the Bottom. This Night, that is, the firſt Night of Maturation, the Patient is reſtleſs, and ſleeps with more Difficulty than at any other time in the Diſeaſe; the Eyes often water, or are bloodſhot. The ſeventh or eighth Day the Face ſwells more than at any other time, the Eyelids ſwelling firſt of all, and are generally blown up, and ſhining like a Bladder, and are generally cloſ'd, at this time. The Puſtules on the Face are large, and begin to look white on the Top; the Interſtices, that is, the Skin between the Puſtules, ſeems to be extended, inflamed, of a red florid Colour; and ſome few Puſtules, even now, begin to dry about the Noſe, Cheeks, or Forehead; the Pulſe ſtill quickens, and grows harder; the Voice ſomething alter'd, as if the Patient had a Cold; the Mind dejected, and ſometimes Sighs break out; the Urine rather paler, and leſs turbid: The Eruptions on the Breaſt, which are fewer than on any other Parts of the Body, are as forward, very near, as thoſe on the Face; thoſe on the Arms are now very large, whitiſh a-top, and very much inflam'd at the Bottom; thoſe on the Hands and Feet come on but ſlowly. On the ninth Day the Face appears to be ſwell'd to the utmoſt; the Eruptions are now larger, and the Matter extremely white, and the Skin, or Interſtices, ſtill more inflam'd, and redder, many on the Face drying on this Day, and ſome few beginning to dry on the Breaſt; the Eyelids of a darkiſh red; the Pulſe now extremely quick, and very hard; the Water paler, thinner, and clearer, than at any other time: Thoſe on the Arms very much inflam'd, and the Interſtices, or Skin, between the Puſtules, almoſt as much inflam'd as on the Face; and, if there are many Eruptions, the whole Arms ſeem to ſwell. At this time, ſome little Rigors appear, now-and-then. On the tenth, the Symptoms are much the ſame as the Day before; the Pulſe as high, and as quick; the Water as clear, the Face as much ſwell'd, only the Eye-lids begin to ſubſide a little; many more drying on the Face, and turning to a yellowiſh Scab. Sometimes the Face ſinks a little on this Day, which, if it does, the Hands begin to puff up, and ſwell on the Back. On the eleventh, the Face begins to fall, eſpecially about the Cheeks and Eyes, the Hands ſwelling more; thoſe on the Hands are quite green, but full ripe, as they were on the Face, on the eighth and ninth Day; the Pulſe now begins to become more regular, not ſo quick, nor hard, as on the two preceding Days; the Urine not ſo thin, or ſo pale, but with a Cloud ſuſpended, turbid, or with a Sediment. On the twelfth the Face continues ſinking, drying, ſcabbing; the Patient has, perhaps, the Eyes ſtill cloſ'd up, not ſo much of the Swelling, which now ſeems to be gone, as the Matter's gluing up the Lids; as the Face ſinks, the Hands continue ſwell'd; the Interſtices between the Eruptions not ſo florid; the Skin not ſo much extended, not ſo hard, more pliable and ſoft to the Touch; that is, the Inflammation remits round the Baſis of each Puſtule; thoſe on the Hands are ſtill full and white, but the Matter begins to thicken; the Pulſe more regular, even than the Day before. On the thirteenth the Hands fall; and if the Feet, as ſometimes they do, that is, if there are many Eruptions on the Inſtep, puff up, and ſwell, as the Hands ſubſide, and at this time the Eruptions on the Feet are at the higheſt State of Maturation: And as thoſe Puſtules on the Face, after they came to Maturation, turn'd and dry'd into a yellow Scab, theſe, upon the Body, break, and dry away: Upon this Day they are generally turn'd all over the Body, unleſs ſome few on the Hands, and thoſe on the Feet: So that here we may ſay, the Diſtemper ends; inſomuch that the ſecondary Fever, which began about the ſixth or ſeventh Day, and continued riſing gradually till the tenth, when it came to the higheſt Pitch, and continued, as it were, ſo for about twenty Hours, and afterwards ſunk by Degrees, upon the thirteenth or fourteenth vaniſhes entirely. As there is no more Matter to be form'd now in any Puſtules, ſo all the Eruptions take the ſame Courſe, ending in Matter, unleſs thoſe at the Bottoms of the Feet, where the Skin, being thick, hard, and callous, reſiſts the Eruption of the Puſtules, and is the Cauſe of their ending in yellowiſh or dark Warts, reſembling ſo many Corns. There is this Diſtinction to be made between Children and grown People: In thoſe the Urine is more turbid, not ſtraw-colour'd, but rather white, the Body not ſo coſtive; in theſe, when the Fever is higheſt, the Water is clear, of a Flame or Straw-colour; in both, at the Declenſion of the Diſeaſe, the Urine becomes thick and turbid.

The *confluent*, when it is kind, differs not at all from the *diſtinct* Sort, if we except the Spitting, or Salivation, which continues during the whole Courſe of the ſecondary Fever. As the Fever, in this *confluent* Sort, aſcends from Day to Day, and comes to the higheſt State about the tenth or eleventh Day; ſo the Spitting, which began with the ſecondary Fever, every Day, as the Fever increaſes, leſſens in Quantity, and becomes conſtantly more and more viſcid; of courſe, as the Fever, on the eleventh Day, is at the higheſt Pitch, the Spittle muſt be, alſo, at this time, extremely viſcid, and therefore hard to be brought up. If it ceaſes at this time, the Patient generally dies. The Pulſe, the Urine, and the Eruptions, were the only Signs we could form Predictions from in the *diſtinct* Sort; but they are not the only Signs in the *confluent*, ſince the Spitting, a Symptom the moſt conſiderable, always attends the Maturation of the Puſtules in the flux Sort, which is over either on the thirteenth, fourteenth, or fifteenth Day.

We have deſcrib'd the ſecond Stage of a regular and kind Small Pox; but it will be neceſſary here to ſhew the various Symptoms. We ſhall now give the Hiſtory of this.

The Eruptions, and other Circumſtances, of this Diſeaſe vary according to the Force of the Fever, the Inflammation, or Fire, in the Conſtitution; ſo that it is impoſſible for any Man in the World to have the Small Pox, if ſome Cauſe or other did not inflame his Blood. Neither is it poſſible for any of theſe Eruptions, Symptoms, Circumſtances, or Variations, during the Courſe of the ſecondary Fever, to exiſt, but what are natural to the Diſtemper, and which are equally eſſential to all phlegmonous Tumors in general. Therefore all theſe Phænomena ariſe, change, or fall, according to the Degree of Inflammation, in ſuch a particular Man, at ſuch a particular Time, whether his Diet be high or low; whether he is an *Egyptian* or *Indian*; let the Medicines, Regimen, Diet, Air, be whatever they will; neither will Conſtitution, Sex, Age, or Climate, avail; the Small Pox will be always the ſame; it can only

only differ as to Degree of Inflammation: So that, the Phyſician, who had *known* this, might have given an Hiſtory of the Small Pox, that would have taken in People of all Degrees, Countries, Ages, Sexes, and Conſtitutions. Let us return back to the Beginning of the ſecondary Fever in the confluent Sort, of an higher Degree than what we have already deſcribed. This Fever coming on, as I ſhew'd before, not ariſing by Degrees, but all at once, like a Storm or Hurricane, altho' the whole Body at this time labours under an Inflammation, yet this Inflammation, as a real Fire, burns and deſtroys, and acts with greater Violence on ſome Parts of the Body than others. About the ſixth Day of the Diſeaſe, the Head ſeems to be the principal Seat of the Inflammation; for the Patient ſuddenly becomes furiouſly light-headed, the Eyes ſtreaming with Water, blood-ſhot, glaring; the Sick has a fierce Aſpect; the Spitting, the conſtant Attendant on Maturation in the Flux Sort, more copious, and more fluid in the Beginning, than afterwards; but if the Inflammation be very high, it is even viſcid at this time; a Quinſey, alſo, attends, a Strangury, and ſometimes bloody Water, which is the moſt fatal Symptom of any in this Diſeaſe, and, therefore, a Mark of the higheſt Inflammation; a ſhort dry Cough, with Stitches, and what is ſpit up from the Lungs, not ſeldom ſtreaked with Blood. For when the Lungs are much inflamed, the Patient, alſo, ſpits the Matter flowing from the Lungs, as in a common Cold, Pleuriſy, or Peripneumony, and the Spittle varies, is cruder, or more digeſted, or tinged with Blood, agreeable to the ſeveral Stages of theſe Diſeaſes; or from the ſalival Glands, or Parts peculiar to a common Salivation raiſed by Mercury, or produced by the Small Pox. This Spittle is, alſo, more or leſs fluid, or extremely viſcid, juſt agreeable to the State of the Inflammation. Another Mark of high Inflammation at this time are, profuſe Sweats: If the Fever is not extremely high, the Patient is coſtive; otherwiſe has a Looſeneſs, the Stools black and fetid; if the Fever, or Inflammation, be ſtill higher, they are tinged with Blood; or the Inflammation aſcending ſtill higher, a Bloody-flux may be produced. The Pulſe, if the Inflammation be tolerable, is quick, hard, and full; if raiſed higher, it quickens more, is ſtill hard, but not ſo full. If the Lungs be principally inflamed, the Pulſe undulates; if the Brain, depreſs'd, ſmall, and threading; the higher the Inflammation is, the colder and paler are the external and extreme Parts; and even ſometimes to that Degree as to produce a cold clammy Sweat: The Tongue and Voice faultering, the Lips trembling, or convulſed, as, alſo, what Phyſicians call *Subſultus Tendinum*. The Urine being of a Flame-colour, is a Mark of high Inflammation; but the crude Straw-colour marks an higher Degree; and, that the Head will be principally affected. Next to the making of bloody Urine, there is no Symptom more fatal than Spots appearing between the Eruptions of the Small Pox; the Red leſs dangerous than the Purple; and the Purple leſs than the Black: For, if the Patient recovers, theſe Spots return from Black to Purple, from Purple to Red, and from Red to the natural Colour of the Skin. Although theſe *Purples*, as they are called, are Marks of the higheſt Degree of Inflammation, yet, if it is poſſible for any Symptom to exceed theſe, it is when the Skin, upon ſeveral Parts of the Body, eſpecially the Legs and Thighs, in great Patches, is black and hard, as if burnt with a hot Iron, or Lightning. If the Inflammation in the flux Sort, on the ſixth or ſeventh Day, be higher than it ſhould be, the Face begins to ſwell ſoon, the Pulſe is quicker on that Day than it ought to be, and the Spittle too viſcid: If the Inflammation be in an higher Degree at this time, the Puſtules, that came on and ripened ſlowly, are now many of them even paſſed Maturation; many of them ſcorched or burnt at Top, as if ſcared with an Iron: The Skin of the Forehead, Arms, and other Parts, either hard, ſtretched, of a darkiſh red, and ſometimes covered between the Puſtules, with very ſmall Eruptions like a Raſh; or elſe, the Skin is of a paliſh, livid, cadaverous Aſpect. With theſe Symptoms the Patient may live from Day to Day, that is, from the ſixth to the ſeventh, from the ſeventh to the eighth, and ſo on, always in Danger, but does not die till the Face begins to ſink; and then, if it ſinks ſuddenly, the Spitting ceaſes, the Voice alters, he grows hoarſe, unable to ſwallow, and then he dies; or ſhould the Face not ſwell at all, as ſometimes it happens, yet he ſtruggles through theſe horrid Symptoms, as long as the Pulſe continues any thing full, and the Spitting, however viſcid and decreaſing, perſevetes; but, whenever the Pulſe quickens exceſſively, and ſinks, and the Spitting ſtops, then he periſhes, which generally happens about the eleventh Day. If the Patient ſurvives beyond this Day, as the Face dries, it turns not, as in the kinder Sort, to a yellowiſh Scab, but a black dark Cruſt. If the Patient dies upon the tenth, twelfth, or even later, on the fifteenth, or twentieth Day, a Looſeneſs, profuſe Sweats, or an intolerable Smell, or Stench, reſembling a putrefied Careaſe, precedes the fatal Event.

It will be proper to mention here the Diſpoſition of Mind in the Courſe of the Diſeaſe: If the Patient appears to be lively, far from dejected, but ſpeaks with Alacrity, and ſome Degree of Boldneſs, it is a Mark of the Height of the Fever, and very near allied to Lightheadedneſs; on the other hand, a Sighing, and great Dejection of Mind, a ſorrowful, mournful, and weeping Aſpect, are Marks of the higheſt Degree of Inflammation.

Thus have we given an Hiſtory of the ſeveral Stages of the Small Pox; and it appears from this Hiſtory, there can be no Changes or Variations, but what flow from one Cauſe, that is, Fire, Inflammation, or Heat, however produced; that there can be no Diſeaſes complicated with the Small Pox, but of the inflammatory Kind; ſo that this Diſeaſe will be the ſame in all Countries, and have the like Nature and Symptoms, in all Ages, Conſtitutions, and Sexes. The Eruptions of the Small Pox may be not improperly compared to ſome particular Kind of Fruit; the Maturation of this Fruit depending upon a certain Degree of Heat, it will be ripened gradually, or very ſoon, or not at all; it may be blighted or burnt up, juſt according to the Diſpoſition of the Climate, the Soil, or Culture, or Skill of the Planter, whether it be planted, inoculated, or grows ſpontaneouſly.

We come now to treat of the Cure of this Diſeaſe; and, as we have endeavoured to ſhew the ſeveral evident Cauſes that produce the Small Pox, or have Power to raiſe it to an high Degree, ſo as to render the Diſtemper fatal to many; and, if it be true, that ſuch Cauſes, which I have mentioned, are found to have that Force or Power to diſpoſe an human Body to Inflammation, Fire, or Putrefaction, the Conſequence of theſe; and, if it be certain, that the Small Pox is a Diſeaſe founded upon an Inflammation, and one of the moſt eminent among the Diſeaſes of the inflammatory Kind, which I am convinced it is, and of which, the Hiſtory I have given is a full Demonſtration; it neceſſarily follows, that if we could evade thoſe Cauſes productive of Inflammations, in general, we evade the Small Pox; or, ſhould we not be able to evade thoſe Cauſes, could we at leaſt find means to reſiſt and oppoſe ſuch Cauſes, that is, prevent ſuch Cauſes to produce their uſual Effects; could we obtain this, could we prevent this, an human Body would not ſuffer an Inflammation; and, therefore, we prevent the Small Pox. But ſhould the Art of Phyſic, or the Sagacity of the Phyſician, not always extend ſo far as to avert ſuch Cauſes, or ſo far oppoſe them, as entirely to deſtroy their Effects, yet if we prevail ſo far as to leſſen thoſe Cauſes productive of Inflammations, or conſiderably leſſen their Effects, we ſhould then have Power to diſpoſe an human Body to a leſs Degree of Inflammation; and of conſequence, to render People leſs ſubject to the Small Pox; or, ſhould they have it, leſs fatal. To be able to effect this, and lay down ſuch Rules that are certain, either to prevent People from falling into the Diſtemper, or to controul the Violence of it, and render it more ſupportable, and more benign, it was neceſſary for us to collect ſuch Obſervations as were ſufficient to prove, that ſuch evident Cauſes would always produce, raiſe, and exaſperate this Diſeaſe; and, that it was only an Inflammation, tho' *ſui Generis*: It will be now neceſſary to ſhew, what are thoſe Means that have, alſo, Power to avert, oppoſe, or controul this Diſeaſe; which, if we are able to do, we are able to cure the Small Pox.

Whether the Phyſician obtains his Ends by the Uſe of Medicines, Choice of Air, Diet, Exerciſe, Repoſe, indulging of Sleep, Watching, or manual Operation, or ſome, or all of theſe together, it matters not. For by whatever Means the Phyſician obtains his Point in View, they are juſt and neceſſary, and are all confined within the Verge of his Preſcription. Whatever there be within the whole Compaſs of Nature, that can poſſibly affect an human Body, ought, if poſſible, by the Phyſician, to be taken Notice of and obſerved; becauſe, every Moment there may be ſomething that offends, and, therefore, to be oppoſed. Of what Extent then are the Phyſician's Views? How can he be confined to one Medicine, or ſuch a particular Method of Cure? Curing then does not conſiſt perpetually in preſcribing this or that Medicine; not but they are ſometimes neceſſary. The Phyſician as often preſcribes happily, and gains his Ends, by forbidding the Uſe of ſuch Medicines, or ordering ſuch and ſuch things to be avoided, which were injudiciouſly directed. Suppoſe an ignorant Perſon confined to the Bed in a ſmall Room, covered with a Load of Cloaths, and a great Fire, taking every Moment ſtrong Broths, or Wine; his Pulſe becomes quick, and the Man is all on Fire, as well he may be: A Phyſician comes; he orders the Fire to be put out, the Cloaths to be taken off; he ſuffers him to cool by Degrees, and the Man is well. I mention this, becauſe I would be rightly underſtood, that I am not going to lay any Streſs upon particular empirical Medicines; for that would be Quackery: I would endeavour to ſhew a rational Comportment, a

Conduct

Conduct to be obſerved by all Phyſicians, the various Methods, Regimen, and Medicines, to be uſed in all Conſtitutions, Climates, Ages, and Sexes. We inſiſt rather on ſuch Rules as direct us what not to do, than on thoſe which ſhew us what to do.

But, before we come to thoſe particular Precepts concerning the curative Part, it will be neceſſary for me to lay down ſome Rules concerning the Effect of Medicines, as well as the Motives a Phyſician acts from in the Choice of his Medicines: For unleſs the Phyſician acts by Motives that are rational and juſt, he can never judge and determine on the real Virtue and Force of a Medicine. The preſent State of Phyſic, built unhappily upon the ſandy Foundation of *Hypotheſis*, and the general Propenſity to Empiriciſm, that is, the Uſe of Quack-medicines, deſerves a more exact Scrutiny into the Efficacy of Medicines.

Thus have I hitherto confined myſelf, before the Cure, to a bare hiſtorical Account of the Small Pox, and divided the Hiſtory of it into ſeveral Stages; having, alſo, given my Opinion concerning the Nature of the Diſeaſe, as well as the ſeveral Maladies that are often complicated with it: Hence the Nature of the Diſeaſe (or, at leaſt, as I imagine) appears to be fully proved to be an Inflammation *ſui Generis*; yet we have an Opportunity to confirm and illuſtrate this eſſential Point, I mean, the Nature of the Diſeaſe, in conſidering the Regimen, Medicines, Diet, *&c.* which I propoſe; the Reſult of which will ſtill add a greater Weight, if poſſible, to the Doctrine I have already laid down, concerning the Nature of this Diſeaſe in particular, as well as all other Inflammations in general. This will be then proving *a poſteriori*, what I have aſſerted; and I may venture to ſay, there cannot be a more certain Method found out to diſcover the Nature of a Diſeaſe, than by that of obſerving, with the greateſt Attention, the Power and Efficacy, as well as various Effects of Medicines on human Bodies; which cannot be determined, unleſs the State and Circumſtances of the Sick, exiſting at thoſe particular Times, are duly conſidered, when ſuch or ſuch Medicines were adminiſtered. The Operations then of ſuch Medicines will beſt ſhew the Nature of the Diſeaſe.

As the deſcriptive Part, then, of this Treatiſe on the Small Pox took in an Account of the Seaſons of the Year, the Climates, Ages, Sexes, and Conſtitutions of People, which have an Influence ſo as to raiſe or oppoſe this Diſeaſe; as, alſo, what thoſe Diſeaſes were which diſpoſe Men to imminent Danger, ſhould they then have the Diſtemper, as well as the various apparent Cauſes productive of the Small Pox; this may be ſaid to regard what precedes the Diſtemper. Next to this, we deſcribed what preceded the Eruption; then, whatever relates to the Small Pox, during the whole Courſe of the Eruption, till that Period of the Diſeaſe be over.

I have next deſcribed the Riſe of the ſecondary Fever, the Maturation of the Puſtules, till they are fully ripe, till they dry and fall away, which is the laſt Stage.

This Order then ſhould be obſerved in the curative Part, and ſuch Precepts propoſed concerning thoſe Medicines, as well as Regimen and Diet, that may have Power ſufficient to reſiſt, or mitigate, to controul, or conquer, a Diſeaſe hitherto, in a manner irreſiſtible.

But, to obtain the End we have in View, let the Means or Method be whatever it will, (whether by Diet, by Regimen, by Medicine; whether by Exerciſe, Repoſe, the Change of Air or Climate, by Watching, or indulging of Sleep, or, laſtly, by what other Means ſoever) provided they are found to have Power to prevent, to reſtrain, or ſubdue an Inflammation, they are certainly neceſſary: If it be true, that the Small Pox is nothing but one of the Species of Inflammations, of conſequence, all ſuch Methods and Means are abſolutely neceſſary to be put in Execution.

But we are forced by Neceſſity to prove what thoſe things are that raiſe an Inflammation, as, alſo, what thoſe things are which produce contrary Effects; or we prove nothing certain to our Point. And there is nothing ſo uncertain in Phyſic, as the Knowledge of the real Effect of that almoſt infinite Number of Medicines we have of late Years introduced among us, concerning which there are many things very confidently and falſely aſſerted.

Boerhaave himſelf laments this deplorable Branch of our Art, and is even unwilling himſelf to give particular Receipts when he treats of Diſeaſes. And well he might: For the Effects of Medicines rather ariſe and take their Force from the Judgment of a Phyſician in their juſt Application, than from any Virtues inherent in themſelves. An Example will illuſtrate this, and confound all the Empirics in the World. A Diſpenſatory will tell you, that Opium will put a Man to ſleep; that a Tincture of *Hiera Picra* will purge; that *Mercurius Dulcis* will abate the Inflammation of a Wound; that Broom-aſhes will promote Urine; that the Bark is an Aſtringent: It is true, theſe Medicines are found to have ſuch Effects; but that is, when they are applied in ſuch particular Caſes, in ſuch particular Conſtitutions, in ſuch particular Diſeaſes; nay, limited to ſuch particular Stages of Diſeaſes. Let but ſuch Caſes, ſuch Conſtitutions, ſuch Stages of a Diſeaſe vary, behold theſe Effects of Medicines vaniſh in a Moment, and quite the contrary ariſe. Half a Grain, or a Grain of Opium, given to a Man upon his coming out of a tepid Bath, having been cupped or bled, the Body not coſtive, will diſpoſe that Man to ſleep: But where the Body is coſtive, the Conſtitution aduſt, inflammatory, being heated with Exerciſe in an hot Summer's Day, in ſuch a Caſe the ſame Quantity of Opium will be found to have a quite contrary Effect; the Perſon, inſtead of being drowſy, and inclined to ſleep, watches, and becomes delirious, for want of Sleep. *Aloes*, infuſed in Wine, purges eaſily a Perſon of a cold flatulent Conſtitution, where there is no Inflammation: But with ſuch whoſe Blood is much inflamed, who are coſtive, and whoſe Urine is high-coloured, ſhould Aloes infuſed in Wine, or Brandy, be given in ſuch a Caſe, it would not purge at all; and the oftener this Medicine is repeated, the more it would act as an Aſtringent, and the more obſtinately coſtive would the Body be rendered; the Perſon muſt certainly die of an Inflammation of the Bowels before the Medicine will be found to have the Effect of Purging. The Bark given after the hot Fit of an Ague is ſpent, is an Aſtringent; but given during the hot Fit, it generally purges: When it binds, or is an Aſtringent, it puts a Stop to the Diſtemper; when it purges, it has no ſuch Effect. A Wound growing foul, and obſtinate to heal, requires the Adminiſtration of ſome Medicines, in order to lower the Inflammation, and bring it to digeſt: If you bleed ſuch a Man, and give him fifteen or twenty Grains of *Mercurius Dulcis*, preſcribing a low Regimen, and let the Mercury purge freely, as it generally will, if there be not an high Inflammation in his Blood, and no great Coſtiveneſs preceding, the Mercury will be found to check the Inflammation of ſuch a Wound: But ſhould it be given where there is a great Inflammation in the Blood, the Body very much bound, the Perſon expoſed to the cold Air, or ſhut up in an hot Room, the Mercury will then have a quite contrary Effect; it will be found to add not only a new Degree of Inflammation to the Wound, but may, alſo, inflame the Bowels, Stomach, the Throat, or the Mouth, and even to ſuch a Degree as if burnt with an Iron. Who has not obſerved the Mouth ulcerated deeply, and in a very little Time, by Mercury's being given injudiciouſly? Broom-aſhes, being given to an hydropical Woman, of a cold phlegmatic Conſtitution, no Fever or Inflammation attending, would promote Urine to a great Degree, that is, would be, as the Apothecaries call it, *diuretic*; but given in a Dropſy, where the Liver, or any other Part of the Bowels is ulcerated, tabid, or highly inflamed, if ſo, there muſt then be a Fever, and the Blood will be, alſo, much inflamed; this Medicine will then have no ſuch Effect, but quite the reverſe; the Urine will be leſs and leſs, higher coloured one Day than another, as the Fever riſes from this alcaline Medicine, till the Patient dies of a Mortification.

This I think ſufficiently proves, that the Effect and Property of Medicines, as the *Subject* varies upon which they act, vary alſo; and as this Subject, or particular Body admits of infinite Variations, ſo do Medicines. Who is there then that can limit the Effects and Properties of Medicines? Or who is there, that can tell how far their Virtues may extend? We can only determine their Powers and Efficacy, in ſome particular Caſes, at ſuch particular Times, and in ſuch particular Conſtitutions.

The more we conſider Phyſic in this Light, the more we ſtill recede from Empyriſm: For rational Phyſic and Empyriſm are as inconſiſtent, as common Senſe and Reaſon are with Enthuſiaſm.

We ſhall now proceed to point out a certain Method of Cure: But the Means, or Inſtruments, neceſſary to effect this End, muſt be proved to have ſuch Force and Efficacy, that may avert, reſtrain, or conquer, an Inflammation; ſince thoſe Accidents and Changes in the Small Pox depend upon an Inflammation, and are the neceſſary Conſequences thereof: And, at the ſame time that we prove ſuch Medicines, Regimen, Diet, *&c.* to have ſuch Virtues, being applied at ſuch particular Times and Circumſtances of the Diſeaſe, we ſhall, alſo, demonſtrate what thoſe Medicines, Regimen, and Diet are, that act upon an human Body ſo as to create, raiſe, and exaſperate an inflammatory Diſeaſe. This a Phyſician ought to know, becauſe it is as incumbent upon him, and of as much Conſequence in the Cure of his Patient, what to forbid him not to do, as what he is to do; that is, to know what to forbid him the Uſe of, as well as what to preſcribe: For that Phyſician often happily directs, who only prohibits the Uſe of ſuch and ſuch things, and preſcribes nothing.

First, then, in order to prevent the Small Pox, could we propoſe ſomething that hath Power to deſtroy the Infection exciting this Species of Inflammation, we prevent the Small Pox. Or, could we find out ſome Means or other, that hath Power over an human Body, ſo as to prevent the uſual Effects flowing from ſuch a Cauſe, we then reſiſt that Cauſe: Altho' the Cauſe be not deſtroyed, nevertheleſs the Effects can never ariſe: If ſo, we equally obtain our Ends. We obſerve the Waters of a ſmooth and tranquil Sea ſoon ariſe, and ſwell, and roll, from a ſudden Storm of Wind. Were it in the Power of any to ſtay that Storm of Wind, the Sea would be calm and not agitated: Or, ſuppoſe there were ſome Means to add a vaſt Weight to thoſe Waters, ſuperior to the Force of a Storm of Wind; if ſo, that Sea would be ſtill and calm, notwithſtanding the Winds were uncontroulable, yet they would blow without Effect, and have no more Power over the Waters, than if they blew over a dry barren Piece of Land. Cauſes exciting the Small Pox are infinite. Some are evident, but many more unknown to us as yet; but whatever they are, they muſt firſt raiſe an Inflammation in the Blood before this Diſeaſe can appear, ſince all Mankind have their Blood inflamed before the fourth Day.

Since many then of theſe Cauſes which produce the Small Pox are hidden Cauſes, it is impoſſible to endeavour at any Means to deſtroy thoſe Cauſes: Yet could we propoſe ſuch Means that have Power to prevent the Body's being ſubject to an Inflammation, we could then reſiſt thoſe Cauſes productive of the Small Pox, by hindering thoſe Cauſes to have their uſual Effects. Hence then, we have Indications ſufficient for our Conduct in avoiding this Diſtemper. The Diet ſhould be cooling, diluting, and ſubacid, *&c.*

In ſhort, every Method muſt be tried that can lower and impoveriſh the Blood: Or, were it poſſible even to give a Diſeaſe, ſuch as a true intermittent Fever, or any Diſtemper of a contrary Nature from that of the Small Pox; for two Diſeaſes, differing eſſentially in Kind, cannot exiſt at one and the ſame time. A Perſon who would avoid the Small Pox, ought to chooſe ſuch Air, or Climate, where inflammatory Diſeaſes are leſs frequent, for I believe there is not a Climate wholly exempt, eſpecially ſuch Places where inflammatory Diſeaſes are epidemic, and at that Time ſtationary. A Man would be moſt likely at ſuch Times, and in ſuch Places, to be ſubject to the Small Pox, and that Conſtitution of Air productive of the Plague, ſpotted Fevers, or whatever other Fever of the inflammatory Kind at that Time epidemic, whether in a Camp, a beſieged Town, in the hot Months of *June*, *July* and *Auguſt*, will add ſo much Fever, or Inflammation, to the Small Pox, as to render it fatal. Neither will it be ſufficient to avoid violent Exerciſe, an high Regimen, ſtrong ſpirituous Liquors, the Mind's being agitated with Paſſions, or depreſſed by too recluſe a Life, intenſe Thought, Application to Buſineſs, or hard Study; the Conſtitution is even to be lowered from that of a vigorous State of Health: For a florid healthy State is very nearly allied to what we may call the *firſt Degree of Inflammation*. A Man who would avoid the Small Pox, ſhould betake himſelf to a lower and more cooling Regimen in his Diet than uſual; the Liquors, ſmall, diluting, and of the acid Kind; Repletion prevented by Bleeding, and cooling Phyſic; the Mind kept in a profound Repoſe; gentle Exerciſe: By theſe Means the Conſtitution will be reduced, as I would have it, rather to the State of a convaleſcent, than one in a perfect State of Health. The cold Bath, in this Part of the World, hath been eſteemed of late Years, by Phyſicians of Eminence, as a powerful Means to prevent the Return of inflammatory Diſeaſes: Therefore it muſt be of Force, to oppoſe, in ſome Degree, the coming on of this Diſeaſe, ſince it is of the inflammatory Kind; even a perfect State of Health is thought to be too near a State of Inflammation to receive the Small Pox, either by Inoculation, or Infection. With how much Attention, then, ought we not to examine, whether a Patient, who would avoid the Small Pox, or have it in a favourable manner, is not already affected with ſome inflammatory Diſeaſe or other? And, if there ſhould be any ſuch Diſeaſes, they are inſtantly, if poſſible, to be cured, leſt the Small Pox ſhould come on, and affect the Patient with a Complication of Diſeaſes, which would be, in ſuch a Caſe, as ſo many Fires multiplied by one another.

Now there are a thouſand Medicines that will raiſe an Inflammation in the Blood; and the Cauſe, the morbific Matter, whatever it be, acts as theſe Medicines, by raiſing an Inflammation: Why then ſhould there not be ſome Medicines, or Means, powerful enough to prevent an Inflammation? Certainly there are; altho' not always powerful enough to prevent, yet they are always found powerful enough to reſtrain or lower an Inflammation: Therefore, it is in our Power to prevent many from falling into this Diſeaſe; and even thoſe that do, by obſerving proper Rules and Methods, will ſeldom be expoſed to Danger, the Diſeaſe not aſcending to an high Degree of Malignity.

In Diſeaſes, ſuch as the Plague, Small Pox, or ſpotted Fever, it is not ſufficient to begin to oppoſe the Diſeaſe, when the Diſeaſe begins; we are, if poſſible, to prepare the Body, and prevent the Diſeaſe: For ſuch as theſe, in ſome particular Climates, Seaſons of the Year, and Conſtitutions, concur in ſuch a manner, that Inflammations of ſo high a Degree ſtrike inſtantaneouſly like Lightning; they conſume and burn with ſuch Rapidity, that the Body is wounded, and ſome Parts deſtroyed on the firſt Attack. Whoever, then, ſtays till the Diſeaſe begins, generally comes too late. It is with us often as with thoſe at Sea: A good Sailor, from what he has diligently obſerved, can by certain Signs foretel an approaching Storm: He lies by, furls his Sails, and prepares himſelf for the Reception of a furious Blaſt of Wind, which might otherwiſe, in an Inſtant, ſhatter and tear his Veſſel to Pieces. Thus then, the Means I have propoſed, in order to avert or prevent the Small Pox, or, at leaſt, *prepare the Body*, ſo that the *Diſeaſe* may be more gentle and benign, ſeem not to be very extraordinary, particularly to thoſe, who have great Confidence in the Pomp of Medicine. Could we perſuade Mankind to believe, that the Virtues of Medicines depend wholly on the Judgment of the Phyſician, we ſhould have no Empirics. What, can living lower than uſual, changing of Air, a little Blood taken away, or a little gentle Phyſic; can ſuch common Means as theſe have ſuch powerful Effects? Thoſe who are well acquainted with Phyſic know, that they have. But theſe Powers and Virtues depend upon the particular Circumſtances of Time. There is nothing more eaſy than to prove this. Suppoſe the Sagacity of a Phyſician extended ſo far as to know, that ſuch a Man would in ten Minutes fall down in an Apoplexy from a Fulneſs of Blood might not the Loſs of only eight or ten Ounces of Blood from the Arm, or the Feet, preſerve that Man? After the Veſſels of the Brain are lacerated and broke with a Profuſion of Blood pent up, the Bleeding to fifty Ounces would have no Effect. What, if a Man were ſeized with a Shortneſs of Breath, a Suffocation with an unuſual Heat in the Cheſt, the Cheeks more than uſually florid, Signs marking the Diſtention of the Lungs, from too great a Fulneſs of Blood? At this time the poor Man, being ignorant of the State he is in, finds himſelf diſpirited, drinks a Glaſs of ſtrong Wine, or Brandy, or a Glaſs of Water, with perhaps forty or fifty Drops of Spirit of Hartſhorn, or ſome ſuch fiery Medicine: Upon this he vomits Blood, he is ſeized with a cold ſhivering Fit like an Ague, he ſpits Matter, and at laſt dies of a Conſumption. Had a Phyſician, in ſuch a Caſe, directed only a Glaſs of Water, and the abſtaining from every thing that could heat or inflame, it is not improbable but that Nature alone, unoppoſed by Medicine ill applied, having only the Diſeaſe at that time to ſtruggle with, might free herſelf. It is then the Timing and the Application of Medicines, or the Means we have propoſed, that gives the Force and Efficacy. Bleeding a few Ounces, a Cordial, a few Drops of Hartſhorn, a Fire in the ſick Man's Room, may be ſaid to be of no great Conſequence: There are ſuch Circumſtances of a Diſeaſe, there are ſuch Times, and ſuch Occaſions, when they are not of any great Moment, nay, of no Effect: But there are Times, when ſuch things will abſolutely kill, or abſolutely cure.

We are every Moment to conſider Nature, and the Diſeaſe, oppoſing each other, as Weights in a Scale: We are to add, to her Side, that ſhe may preponderate; and there are ſuch Times, when the leaſt Weight is of the greateſt Moment, and will turn the Scale. A Cypher in Arithmetic, placed among Figures, affects thoſe Figures juſt according to the Poſition or Application of that Cypher; the Value ſtill riſing, or decreaſing, according as it is placed: So do Medicines, Diet, Exerciſe, Regimen, *&c.*

As I have already, under the Article INFLAMMATIO, treated largely of the Treatment due to an Inflammation; a Repetition of what is ſaid there would be ſuperfluous: The prudent Phyſician, upon whoſe Conduct and Abilities much depends, will judge the Occaſions of preventing and checking a threatening Degree of Inflammation, and will diſcern the Seaſons when Remedies are to be applied, and of what Sort they ought to be.

OF INOCULATION.

As Inoculation for the Small Pox has raiſed the Attention of all Nations, it cannot be thought improper, for the ſake of young Beginners, to deſcribe the Method of this Operation, which may be ſo beneficial to Mankind.

The Deſign, then, of Inoculation, is, to communicate a mild Species of the Small Pox to Infants, or Adults; and the Method is, to make a ſmall Inciſion in the Arm, or Leg, with a Knife, and therein inſert ſome of the purulent Matter, taken from

from Patients labouring under a mild Kind; then dreſs the Wound with Lint, and a Plaiſter. Dr. *Harris*, in *Diſſert. Chirurg.* orders only the *Cuticula* to be abraded, and the Matter to be ſpread on the naked Skin. After the Operation, the Patient ſhould keep himſelf moderately warm, and obſerve a proper Regimen; by which means, the Diſorder will appear in about ſeven Days, without any dangerous Symptoms; and, if aſſiſted by a regular Diet, and moderate Warmth, generally goes through all its Stages with Succeſs. Experience evinces, that this Diſtemper is never caught a ſecond time after Inoculation; which is a ſufficient Reaſon for the Opinion of thoſe who aſſert, that this Operation might be of univerſal Benefit to Mankind, by ſaving the Lives of ſome, and preſerving a Beauty of Countenance, and Strength of Sight, in others.

We learn, from Hiſtory, that *Inoculation* has, for a long time, been practis'd by the *Greeks* and *Turks*, though it is of modern Date in *Europe*; and was firſt encoutag'd by the *Engliſh*, who met with ſo much Succeſs, that King *George* II. without any Heſitation, had the Operation perform'd on all his Children: So that the *Germans*, eſpecially the Inhabitants of *Hanover*, *Onolsbac*, and *Pyrmont*, came very readily into it.

Some, I confeſs, amongſt the *French* and *Engliſh*, have, in their Writings, condemned this Practice, as fatal to Mankind, and unbecoming a Chriſtian; but theſe Objections have been long ago fully anſwered by Men of great Learning. If the Reader deſires a more particular Account of this Operation, he may conſult *Pylarinus* an *Italian*, *Maitland* an *Engliſhman*, and the celebrated *Katerus* of *Wirtemberg*; and the *Acta Erudit. Lipſ. An.* 1723, 1725, *&c. Act. Natur. curioſ. Vol.* I. *Obſ.* 75. and the *Acta Uratiſlavienſia*; where this Subject is handled at greater Length. The Practice of *Inoculation* has, alſo, the Sanction of Experience, the beſt Maſter and Inſtructor in every Science. For my own Part, I am ſo far from thinking *Inoculation* fatal, that I am convinced it might be thoroughly beneficial to Mankind: For, in my Opinion, the Small Pox proceeds from a peſtilential Matter intermixed with the Blood from the very Day of our Birth, and which generally breaks out in every Perſon ſooner or later; and the ſooner, generally the better; for this Diſtemper is often fatal to Perſons advanced in Years: So that the *Virus* ſeems to increaſe with the Patient's Age. And this ſeems the very Reaſon why the Small Pox is more favourable to Infants than Adults. If, therefore, the Diſorder be procured from a mild Kind, and the Venom diſcharged from the Blood, while it is ſmall in Quantity, and the Infant young, I make no doubt but many Children, eſpecially thoſe of Princes and Noblemen, might be preſerved, not only from the moſt malignant Symptoms, but even from Death. When this Diſtemper is received from a natural Infection, it often proves very mortal; on the contrary, if procured by Art, the Patient is prepared by a proper Diet and Medicines, and uſually finds it leſs ſevere. It is unneceſſary to produce any further Reaſons in Juſtification of this Practice, as theſe muſt be ſufficient to convince every reaſonable Man. *Heiſter. Chirurg.*

VARIUS, *ſeu Phoxinus levis.* J. Jonſt. Is a ſmall River-Fiſh, which the *Italians* call *Morella*, and the *French petite Truite*, "a ſmall Trout." It is ſcarce above a Digit in Length, its Skin even, ſmooth, and poliſhed. It is of various Colours, whence it has its Name; yellow on the Back, ſilver-coloured on the Belly, purple on the Sides, and marked all over with black Spots; the Fleſh is ſoft, tender, and good to eat.

As to its medicinal Virtues, it is pectoral, reſtorative, and aperitive. *Lemery des Drogues.*

VARIX, *plur.* VARICES.

By the Name *Varices*, among Phyſicians, are meant thoſe unequal, nodous, and blackiſh Tubercles of the Veins *, which are ſubject to riſe in any Part of the Body; but moſt frequently in the Feet, about the Ancles; though ſometimes higher, as about the Legs, Thighs, and other Places, as the *Scrotum*; and even in the Head and Belly, as *Celſus* obſerves, *Lib.* 7. *Cap.* 31. This Diſeaſe moſt frequently infeſts pregnant Women, but is incident to any other Perſons, eſpecially thoſe who abound with thick Blood, or are affected with a Pain of the *Hypochondria*, an Obſtruction of the Liver, or a *Scirrhus*. The more the *Varices* increaſe, the more painful and troubleſome they become, on account of the more violent Tenſion of the Membranes; and, ſometimes, they even come to a Rupture, and diſcharge Plenty of Blood, or degenerate into malignant Ulcers, as I have ſometimes obſerved. The ſmaller Kinds of *Varices* uſually create but little Uneaſineſs; and are, therefore, neglected by the Patient, as not requiring the Aſſiſtance of the Surgeon.

In order, however, to prevent a ſmall, and, at firſt, inconſiderable Evil, from increaſing by degrees, and growing formidable, to the great Detriment and Annoyance of the Patient, it will be adviſeable to open a Vein, with all Speed, and take away a Quantity of Blood; and, after that, to preſcribe a proper Regimen of Diet: This done, it will be convenient to ſecure the diſeaſed Feet in the moſt careful and exact manner, with a repellent, or, as it is commonly called, expulſive Bandage [*Tab.* XXIV. *Fig.* 1. F]; and whenever you perceive it to ſlacken, in any meaſure, or become looſe, to ſtraiten it anew, and never to remove, or throw it off, while you are under the leaſt Apprehenſions of an Increaſe of the Diſorder. The Antients, as we learn from *Celſus*, freed their Patients from the *Varices* by a ſpeedy Cauteriſation, or Exciſion; but we Moderns uſe a milder way of proceeding: If the *Varices*, then, are increaſed to a conſiderable Bigneſs, we apply the Bandage before-mentioned for the Conſtriction and Strengthening of the Veins, which are dilated beyond their juſt Meaſure, moiſtening the Fillet with red Wine warm, or a Decoction of Aſtringents, or of Vinegar and Alum; and binding, alſo, a thin Plate of Lead upon the Part affected. *Dionis* aſſures us, that there is no Method more effectual for repreſſing the *Varices*, than by Stockings made of Dog-ſkins, or other Skins fit for the Purpoſe, and ſo contrived, as, by Help of a Cord, to be ſtraitened, and drawn as cloſe as the Patient can well ſuffer it; by which means, the Legs may be kept under a cloſe and exact Conſtriction, both Day and Night. The Form of thoſe directed by *Dionis*, is repreſented *Tab.* LVII. *Fig.* 11. Such Spatterdaſhes may, alſo, be made, in the ſame Faſhion, of grey linen Cloth, which is ſtrong enough, as I have ſeen them myſelf. The moſt effectual Remedy againſt the *Varices*, in the Opinion of *Harris*, *Diſſertat. Chirurg.* 8. is Tincture of Myrrh, if the Part affected be frequently anointed with it, and then covered with *Rulandus*'s *Emplaſtrum Diaſulphuris:* And if there be, afterwards, a Bandage applied, or a Conſtriction of the Place effected, by means of Stockings, in the manner before deſcribed, the greater is the Succeſs to be expected from this Remedy.

Where the *Varices* are increaſed beyond Meaſure, and ſwelled to ſo enormous a Degree, as to threaten a Rupture, and a dangerous Hæmorrhage is to be feared, or if they grow intolerable to the Patient on any other Account, recourſe muſt be had to the Knife, and Section muſt be uſed. In this Operation we make a longitudinal Inciſion into thoſe Tubercles of the Veins which are moſt ſwelled, or which excite the greateſt Pain; and after evacuating the thick Blood, to the Quantity of eight, ten, or twelve Ounces, according to the various Habits of the Patient, we dextrouſly cover the Wound with Lint dipt in Bole Armoniac and Vinegar; and upon this applying a leaden Plate, we ſecure the Whole with a Bandage. If the Operation be rightly performed, there generally ſucceeds a Coalition of the Veins, in much the ſame manner as after Phlebotomy, and the Veſicles are ſtregthen'd by their Cicatrices; ſo that the ſame Place is ſcarce ever infeſted with *Varices* afterwards. The antient Surgeons, as we ſaid, cured *Varices* by Cautery or Exciſion. See *Celſus*, *Lib.* 7. *Cap.* 31. The Method in which the latter was performed, was thus: Firſt, They cut the Skin upon the diſtended Vein; then took hold of the vitiated Part of the Vein with an Hook, and with a Knife cut it quite off, and ſeparated it entirely from the Body, after which they healed up the Wound with a Plaiſter. *Govey*, in *Chirurgie veritable*, declares himſelf of Opinion, that the quickeſt, and, at the ſame time, the ſafeſt Method of curing *Varices*, is to paſs a crooked Needle with a double waxed Thread, quite under the diſtended Vein; and by drawing the ſame into a Knot, to make a firm Ligature upon the Vein, then immediately to make an Inciſion with the Knife into the tumid Vein, and diſcharge a ſufficient Quantity of the thick Blood: This done, the Wound is to be treated with ſome digeſtive Ointment, and the Patient is to keep his Bed, till the Wound is almoſt conglutinated. The antient Method by Cautery was firſt to cut the Skin, then lay open the Vein; and this done, gently to preſs the ſame with a ſlender, blunt, red-hot Iron; the Lips of the Wound being held aſunder with Hooks, to prevent their being burnt, (*Celſus*, in the Place before-quoted): When this was over, they treated the Wound with Remedies adapted to Combuſtions. *Harris*, indeed, judges all Methods of Exciſion and Burning not only raſh, but cruel; it muſt, however, be confeſſed, that the Moleſtations and Pains, created by the *Varices*, are ſometimes ſo violent, that a Rupture may be dreaded, and that in the Night, (of which I know a very remarkable Inſtance) with Danger of Death; for which Reaſons the Aſſiſtance of ſuch potent Remedies, as the Knife and Needle, is on ſuch Occaſions neceſſarily required.

But by whatever means the *Varices* are cured, it ſeems highly neceſſary, in order to prevent the Return of ſo troubleſome a Diſorder, to uſe the proper Cautions of avoiding too groſs and plentiful Feeding, and to drink ſmaller Liquors; ſuch as Water, Water-gruel, Tea, Coffee, or Infuſions of other proper Vegetables. The Body, alſo, is very frequently to be exerciſed; the Feet are every Day to be well rubbed; and Phlebotomy is to be adminiſtered at leaſt twice in the Year, that is, in Spring and Autumn. The ſame Precautions are to be obſerved

ſerved by thoſe who are but newly or ſlightly affected, and are willing to avoid greater Inconveniencies, not to be removed but by the Knife and Fire. *Muys* has a ſingular Inſtance of a Varix, combined with Ulcers, which he opened once every Year, and diſcharged a Pound of Blood; by which Means the Eruption of the Ulcers was prevented. See his *Chirurg. Rational. Dec.* 1. *Obſ.* 6. *Heiſteri Chirurg.*

VANUS. A Pimple on the Face. See FURUNCULUS.

VAS. A Veſſel either for mechanical, chymical, culinary, or any other Uſes. In Anatomy, all the Parts which convey a Fluid are called *Veſſels*, as the Veins, Arteries, and Lymphatics.

VASTUS EXTERNUS.

This is a very large fleſhy Muſcle, almoſt as long as the Os Femoris, broad at the Extremities, and thick in the Middle, lying on the Outſide of the Thigh.

Its upper Inſertion being ſomething tendinous, is in the poſterior, or convex rough Surface, of the great *Trochanter*: It is, alſo, fixed by a fleſhy Inſertion along the Outſide of the Os Femoris, for above two Thirds of its Length downward, in the correſponding Part of the *Linea Aſpera*, and in the neighbouring Portion of the *Faſcia Lata*.

From all this Extent, the fleſhy Fibres running downward, and a little obliquely forward toward the *Rectus Anterior*, terminate inſenſibly in a kind of ſhort Aponeuroſis, which is fixed in all the neareſt Edge of the Tendon of the *Rectus*, in the Side of the Patella, in the Edge of the Ligament of that Bone, and in the neighbouring lateral Part of the Head of the Tibia.

The Body or Belly of this Muſcle grows bigger gradually, from its upper Extremity to the Middle; and from thence diminiſhes again by Degrees. Its loweſt Fibres run in a little behind the *Rectus*, and are inſerted there.

VASTUS INTERNUS.

This Muſcle is very like the former, and ſituated in the ſame manner, on the Inſide of the Os Femoris.

It is fixed above by a ſhort flat Tendon, in the anterior rough Surface of the great *Trochanter*, and, by fleſhy Fibres, in that oblique Line which terminates the Baſis of the Collum Femoris anteriorly, on the Foreſide of the Inſertions of the *Pſoas* and *Iliacus*; in the whole Inſide of the *Os Femoris*; and in the *Linea Aſpera* on one Side of the Inſertions of the three *Tricipites*, almoſt down to the internal Condyle.

From all this Extent the Fibres run downward, and a little obliquely forward; and the Body of the Muſcle increaſes, in the ſame manner as the *Vaſtus Externus*. It terminates below in an Aponeuroſis, which is fixed in the Edge of the Tendon of the *Rectus Anterior*, in the Side of the Patella, and of its tendinous Ligament; and in the Side of the Head, or upper Extremity of the Tibia.

The two Vaſti and Crureus ought to be looked upon as a true Triceps; the Uſes of which, in relation to the Bones, are only to extend the Tibia on the Os Femoris, and the Os Femoris on the Tibia. The Extenſion of the Tibia on the Os Femoris happens, principally, when we ſit or lie, and that of the Os Femoris on the Tibia, when we ſtand or walk. All the three Muſcles move the Patella uniformly, in the Direction of the Os Femoris, on the Pulley at the lower Extremity of that Bone. The external or broad Portion of this Pulley, and of the Patella, anſwers to this Direction, and ſeems to be more expoſed to the Action of theſe Muſcles, than the internal and narrow Portion, on which the neceſſary Obliquity of that Pulley depends.

The Inſertion of both the Vaſti immediately in the Head of the Tibia, prevents the Patella from being luxated laterally on ſome Occaſions, in which the Muſcles may act with more Force on one Side than on the other, or remain without Action, in which Caſe the Patella is looſe and floating.

To be convinced of this Inaction, and of the Moveableneſs of the Patella at the ſame time, let us either in Sitting or Standing, with the Leg extended, reſt the Leg only upon the Backſide of the Heel, ſo as that the whole lower Extremity may be ſupported on the Heel, and on the Head of the Os Femoris, the Knee, and the Body of the Os Femoris, reſting on nothing, and the Extenſion being made only by the Weight of the Bones, without any Aſſiſtance from the Muſcles. If in this Situation we lay the Thumb on the Baſis of the Patella, and the fore Finger on the Apex, and preſs theſe two Parts alternately, the Patella will be perceived to be raiſed and depreſſed.

In the Deſcription of theſe Muſcles, I forgot an Obſervation which I have made on the Inſertion of ſeveral Fibres immediately in the Capſular Ligament of the Joint of the Knee. I have ſeen theſe Fibres run down, as if they came principally from the Crureus; and their Inſertion in the Ligament was oblique, and made by degrees.

By the Inſertion of theſe Muſcles in the Patella, their Line of Direction is removed to a greater Diſtance from the Centre or Axis of Motion of the Joint, which facilitates their Action, and defends their common Tendon from Compreſſion and Contuſions. *Winſlow.*

VASUM, in *Scribonius Largus*, is a Veſſel.

VATICANÆ PILULÆ. The Name of ſome purging Pills, deſcribed in the Old *London* Diſpenſatory, thus:

Take of Calamus Aromaticus, Aniſe, Maſtich, Ginger, Cinnamon, Zedoary, the leſſer Cardamoms, Mace, Nutmegs, Cloves, Saffron, Cubebs, Aloes-wood, Turbith, Manna, Agaric, Sena-leaves, Caſſia-wood, and all the Species of Myrobalans, each one Scruple; of the Leaves of Scordium, and Carduus Benedictus, each half a Dram; and of the beſt Rhubarb, one Ounce, two Scruples: Reduce to a fine Powder: To which add of the beſt Aloes, two Ounces, four Scruples; and of the Solutive Syrups of Roſes, and Violets, each a ſufficient Quantity: Make into a Maſs of Pills, according to Art.

VAYNILLAS. The ſame as VANILIA.

UCAUNA. A Sort of Cray-fiſh of an olive Colour, mentioned by *Lemery*, in his Treatiſe on Drugs, which, he ſays, is pectoral and aperient.

VEEL-GUTTA is, according to *Blancard*, a Name for the OREOSELINUM.

VEGETATIO. Vegetation. See BOTANY.

VEHICULUM. A Vehicle, in Pharmacy, is any Liquor in which a Medicine is given to a Patient, in order to render the Exhibition more grateful and commodious.

VELONÆ. Certain Fiſhes mentioned by *Oribaſius*, *Collect. Medic. Lib.* 2. *Cap.* 58. whoſe Beaks, he ſays, are horny, and that they afford a very bad Juice.

VENÆ. The Veins.

The Veins are only a Continuation of the extreme Capillary Arteries, reflected back again towards the Heart, and uniting their Chanels as they approach it, till at laſt they all form three large Veins; the *Cava Deſcendens*, which brings the Blood back from all the Parts above the Heart; the *Cava Aſcendens*, which brings the Blood from all the Parts below the Heart; and the *Porta*, which carries the Blood to the Liver.

The Coats of the Veins are the ſame with thoſe of the Arteries, only the muſcular Coat is as thin in all the Veins, as it is in the Capillary Arteries; the Preſſure of the Blood againſt the Sides of the Veins being leſs than that againſt the Sides of the Arteries.

In the Veins there is no Pulſe, becauſe the Blood is thrown into them with a continued Stream; and becauſe it moves from a narrow Channel to a wider.

The Capillary Veins unite with one another, as has been ſaid of the Capillary Arteries.

In all the Veins which are prependicular to the Horizon, excepting thoſe of the Uterus, and of the *Porta*, there are ſmall Membranes or Valves; ſometimes there is only one; ſometimes there are two, and ſometimes three placed together, like ſo many half Thimbles ſtuck to the Sides of the Veins, with their Mouths towards the Heart. In the Motion of the Blood towards the Heart, they are preſſed cloſe to the Sides of the Vein; but if Blood ſhould fall back, it muſt fill the Valves; and they, being diſtended, ſtop up the Channel, ſo that no Blood can repaſs them. *Keil's Anatomy.*

The Blood, diſtributed to all Parts of the Body by two Kinds of Arteries, the Aorta, and Pulmonary Artery, returns by three Kinds of Veins, called by Anatomiſts *Vena Cava*, *Vena Portæ*, and the *Pulmonary Vein*.

The *Vena Cava* carries back, to the Right Auricle of the Heart, the Blood conveyed by the Aorta to all the Parts of the Body, except what goes by the Coronary Arteries of the Heart: It receives all this Blood from the arterial Ramifications, in Part directly, and in Part indirectly.

The *Vena Portæ* receives the Blood carried to the floating Viſcera of the Abdomen, by the Cœliac Artery, and the two Meſenteric Arteries; and conveys it to the Hepatic Vein, and from thence to the *Vena Cava*.

The Pulmonary Vein conveys to the Pulmonary Sinus, or Left Auricle of the Heart, the Blood carried to the Lungs by the Pulmonary Artery.

To theſe three Veins two others might be added: Thoſe which belong particularly to the Heart, and to its Auricles, and the Sinuſes of the Dura Mater.

In deſcribing the general Courſe of the Veins, we may either begin by their Extremities in all the Parts of the Body, and end by the Trunks carried all the Way to the Heart, according to the Courſe of the Blood; or we may begin by the great Trunks, and end by the Ramifications, and Capillary Extremities, according to their ſeveral Diviſions and Subdiviſions.

This

This laſt Method is moſt convenient, and makes it a very eaſy Matter to purſue the firſt, whenever we think it proper to do it; and, for theſe Reaſons, I have choſen to follow it, in this Deſcription.

We commonly talk of the *Vena Cava* in general, as if it were but one Vein at its Origin, or had but one common Trunk; whereas it goes out from the Right Auricle of the Heart, by two large ſeparate Trunks, in a Direction almoſt perpendicularly oppoſite to each other, one running upward, called *Vena Cava ſuperior*; the other downward, called *Vena Cava inferior*.

It may, however, be ſaid, that theſe two Veins have a Sort of Continuity, or a ſmall Portion of a common Trunk, fixed to the Edges of the Right Auricle, as if three Quarters of the Circumference of a large ſtrait Tube were cut off, and the Edges of a ſmall Bladder applied to the Edges of the Opening, thus made in the Tube.

The Right Auricle may, alſo, be looked upon as a muſcular Trunk common to theſe two large Veins, and may be called the Sinus of the *Vena Cava*; but, in this reſpect, the Name of *Sinus Pulmonaris* agrees ſtill better to the Left Auricle.

The ſuperior *Vena Cava* is diſtributed, principally, to the Thorax, Head, and upper Extremities, and but very little to the Parts below the Diaphragm.

The inferior *Vena Cava* is diſtributed, principally, to the Abdomen and lower Extremities, and but very little to the Parts above the Diaphragm.

The Antients called the ſuperior *Vena Cava*, *Aſcendens*; and the inferior, *Deſcendens*; having regard only to the great Tubes, and to their Diviſion into Trunks and Branches. Several Moderns have retained thoſe Names, but in a contrary Signification, to accommodate them to the Motion of the Blood, which deſcends by the *Cava Superior*, and aſcends by the *Cava Inferior*.

But to avoid the Miſtakes that may happen in Reports made of Wounds, or other Diſeaſes, and of what is obſerved in opening dead Bodies, and in other Caſes of theſe Kinds, it is beſt to retain the Diſtinction of *Vena Cava ſuperior* and *inferior*.

The Trunk of each of theſe two Veins ſends off, much in the ſame manner with the Arteries, a certain Number of principal or capital Branches, which are afterwards ramified in different manners. Each Trunk terminates afterwards by a Bifurcation, or a Diviſion into two ſubordinate Trunks, each of which gives off other principal Branches, ending in a great Number of ſmall Trunks, Branches, and Ramifications.

They have, alſo, this common to them with the Arteries, that the greateſt Part of the capital Branches are in Pairs; as well as the ſubordinate Trunks. The Ramifications of each ſubaltern Trunk, taken by itſelf, are in uneven Numbers; but they make even Numbers with thoſe of the other like Trunk. The *Vena Azygos*, and ſome other ſmall Veins, are Exceptions from this Rule.

Before I go on to the particular Deſcription of each of theſe Veins, many of which have proper Names, I ſhall give a general Idea of their Diſtribution, and an Enumeration of their principal Ramifications. But I ſhall ſay nothing of the Coronary Veins of the Heart, becauſe they are not immediately joined to any other Vein. I begin by the ſuperior *Vena Cava*.

Vena Cava superior.

The ſuperior *Vena Cava* runs up from the Right Auricle of the Heart, almoſt in a direct Courſe, for about two Fingers-breadth, lying within the Pericardium, in the Right Side of the Trunk of the Aorta, but a little more anteriorly.

As it goes out of the Pericardium, it is inclined a little to the Left Hand, and then runs up about an Inch, that is, as high as the Cartilage of the firſt true Rib, and a little higher than the Curvature of the Aorta. At this Place it terminates by a Bifurcation, or Diviſion into two large Branches, or ſubordinate Trunks; one of which runs toward the Left Hand, the other towards the Right.

Theſe two Branches are named *Subclaviæ*, as lying behind, and, in ſome meaſure, under, the *Claviculæ*, both in the ſame manner. They are of unequal Lengths, becauſe the Trunk of the *Vena Cava* does not lie in the Middle of the Thorax, but toward the Right Side, where the Left Subclavian ariſes as well as the Right, and is, conſequently, longeſt.

The Trunk of the ſuperior Cava, from where it leaves the *Pericardium* to the Bifurcation, ſends out anteriorly ſeveral ſmall Branches, which ſometimes ariſe ſeparately, and ſometimes by ſmall common Trunks: Theſe Branches are, the *Vena Mediaſtina*, *Pericardia*, *Diaphragmatica ſuperior*, *Thymica*, *Mammaria Interna*, and *Trachealis*, the laſt of which go out ſometimes behind the Bifurcation.

All theſe ſmall Branches from the Trunk of the *Cava ſuperior* are termed *Dextræ*; and their Fellows on the other Side, called *Siniſtræ*, do not ariſe from the Trunk, becauſe of its lateral Situation, but from the Left *Subclavia*.

Poſteriorly, a little above the *Pericardium*, the Trunk of the ſuperior *Cava* ſends out a capital Branch, called *Vena Azygos*, or *Vena ſine Pari*, which runs down on the Right Side of the Bodies of the Vertebræ Dorſi, almoſt to the Diaphragm; giving off the greateſt Part of the *Venæ Intercoſtales*, and *Lumbares Superiores*.

The two *Subclaviæ* run laterally, or toward each Side, and terminate as they go out of the Thorax, between the firſt Rib and Clavicula, immediately before the anterior Inſertion of the *Muſculus Scalenus*.

The Right Subclavian, which is the ſhorteſt of the two, commonly ſends out four capital Branches; the *Jugularis externa* and *interna*, the *Vertebralis*, and *Axillaris*, which laſt is rather a Continuation than a Branch of the *Subclavian*.

The Left Subclavian, being longer than the Right, gives off, firſt of all, the ſmall Veins on the Left Side, anſwering thoſe on the Right Side, that come from the Trunk of the ſuperior Cava; as the *Mediaſtina*, *Pericardia*, *Diaphragmatica ſuperior*, *Thymica*, *Mammaria Interna*, and *Trachealis*.

Next to theſe ſmall Veins, called *Siniſtræ*, it detaches another ſmall Branch, called *Intercoſtalis Superior Siniſtra*, and then four large Branches, like thoſe on the Right Subclavian, as the *Jugularis Externa* and *Interna*, *Vertebralis*, and *Axillaris*, which are all termed *Siniſtræ*.

The external Jugular Veins are diſtributed principally to the outer Parts of the Throat, Neck, and Head; and ſend a ſmall Vein to the Arm, named *Cephalica*, which aſſiſts in forming a large one of the ſame Name.

The internal Jugular Veins go to the internal Parts of the Neck and Head, communicating with the Sinuſes of the Dura Mater, and in ſeveral Places, with the external Jugular Veins.

The Vertebral Veins paſs through the Holes in the tranſverſe Apophyſes of the Vertebræ of the Neck, ſending Branches to the Neck and Occiput, they form the *Sinus Venales* of theſe Vertebræ, and communicate with the Sinuſes of the *Duræ Mater*.

The Axillary Veins are Continuations of the *Subclaviæ*, from where theſe leave the Thorax, to the Axillæ: They produce the *Mammariæ Internæ*, *Thoracicæ*, *Scapulares*, or *Humerales*, and a Branch to each Arm, which, together with that from the external *Jugularis*, forms the *Vena Cephalica*.

Afterwards the Axillary Vein terminates in the principal Vein of the Arm, called *Baſilica*; which, together with the *Cephalica*, is diſtributed, by numerous Ramifications, to all the Parts of the Arm, fore Arm, and Hand.

Vena Cava inferior.

The Portion of the inferior *Vena Cava* contained in the *Pericardium* is very ſmall, being ſcarcely the twelfth Part of an Inch on the fore Part, and not above a Quarter of an Inch on the back Part. From thence it immediately perforates the Diaphragm; to which it gives the *Venæ Diaphragmaticæ Inferiores*, or *Phrenicæ*.

It paſſes next behind the Liver, through the great Sinus of that Viſcus, to which it furniſhes ſeveral Branches, termed *Venæ Hepaticæ*.

In this Courſe it inclines a little toward the *Spina Dorſi* and *Aorta Inferior*, the Trunk and Ramifications of which it afterwards accompanies in the Abdomen, all the Way to the *Os Sacrum*; the *Arteria Cœliaca*, and the two *Meſentericæ*, only excepted.

Thus the inferior *Cava* ſends out on each Side, in the ſame manner with the Aorta, the *Venæ Adipoſæ Renales*, *Spermaticæ*, *Lumbares*, and *Sacræ*. Having reached to the *Os Sacrum*, it loſes the Name of *Cava*; and, terminating by a Bifurcation, like that of the deſcending Aorta, it forms the two *Venæ Iliacæ*.

Theſe Iliac Veins having given off the Hypogaſtricæ, with all their Ramifications, to the Viſcera of the *Pelvis*, and to ſome other external and internal neighbouring Parts, go out of the Abdomen, under the *Ligamentum Fallopii*, and there take the Name of *Venæ Crurales*.

Each Crural Vein ſends off numerous Ramifications to all the lower Extremities; beſides the *Vena Saphena*, which goes out near the Origin of the *Cruralis*, and, running along this whole Extremity, detaches many Ramifications, all the Way to the Foot.

Vena Azygos and Venæ Intercostales.

The *Vena Azygos*, or *ſine Pari*, is very conſiderable, and ariſes poſteriorly from the ſuperior *Cava*, a little above the *Pericardium*.

It is immediately afterwards bent backward over the Origin of the Right Lung, forming an Arch which ſurrounds the great Pulmonary Veſſels on that Side, as the Arch of the Aorta does thoſe

those of the Left Side; with this Difference only, that the Curvature of the *Azygos* is almoſt directly backward; whereas that of the Aorta is oblique. From thence it runs down on the Right Side of the *Vertebræ Dorſi*, on one Side of the Aorta, and before the Intercoſtal Arteries; and, getting behind the Diaphragm, it terminates by a very ſenſible Anaſtomoſis; ſometimes with the *Vena Renalis*, ſometimes with a neighbouring Lumbar Vein, ſometimes immediately with the Trunk of the *Cava Inferior*, and ſometimes otherwiſe.

I have ſeen this Vein extremely large, reſembling the Trunk of the inferior Cava, from the Diaphragm, to the Origin of the *Renales*, the true Cava being through all this Space very narrow, or of the Size of an ordinary *Azygos*.

The *Vena Azygos* ſends out, firſt of all, two or three ſmall Veins from the Top of the Arch, one of which goes to the Aſpera Arteria; the others partly to the Aſpera Arteria, and, partly, to the Bronchia, by the Name of *Venæ Bronchiales*, accompanying the Ramifications of the Bronchial Artery.

Afterwards the *Azygos* detaches from the Extremity of the Arch, a ſmall Trunk common to two or three ſmall Veins, called *Intercoſtales Superiores Dextræ*, which bring back the Blood from the firſt three Series of Intercoſtal Muſcles, and from the neighbouring Part of the Pleura.

Theſe Intercoſtal Veins ſend Branches through the Intercoſtal Muſcles to the *Serratus Superior Poſticus*, and to the *Serratus Major*, and afterwards they run along the Interſtices between the Ribs, communicating with the *Venæ Mammaria*.

They, alſo, ſend ſmall Branches backward to the Vertebral Muſcles, and Canal of the Spine, where they communicate with the Venal Circles, or Sinuſes, which bring back the Blood from the *Medulla Spinalis*.

As the *Azygos* runs down, it ſends off the inferior Intercoſtal Veins on the Right Side, one going to each Series of Intercoſtal Muſcles: Theſe Veins run along the lower Edges of the Ribs, and perforate the Muſcles by Branches, which go to the poſterior and external Part of the Thorax.

They communicate with the *Venæ Thoracicæ*, and moſt commonly with the *Mammaria Interna*; and, laſtly, more or leſs with each other, by perpendicular Branches, near the poſterior Extremities of the Ribs.

The *Azygos* ſends off, likewiſe, the Left Intercoſtal Veins, but ſeldom the whole Number; for the ſuperior Veins come often from the Left Subclavian. The inferior Intercoſtal Veins, to the Number of ſix or ſeven, ſometimes more, ſometimes fewer, come often from the Trunk of the *Azygos*; and running between the Aorta and Vertebræ, to the Subſtance of which they give ſmall capillary Twigs, they ſend off almoſt the ſame Ramifications with the Veins on the Right Side, and likewiſe ſome to the *Oeſophagus*.

Sometimes theſe Intercoſtal Veins come from a ſmall common Trunk, which goes out from that of the *Azygos*, and, paſſing between the Aorta and Vertebræ, is bent downward along the Left Side of the Vertebræ: In which Courſe it detaches the Intercoſtals laterally. This ſmall Trunk is in ſome Subjects bifurcated upwards and downward, as it ſends off the Intercoſtals; and, in others, there are two ſmall common Trunks.

Laſtly, There is ſometimes an entire *Azygos* on the Left Side, which proceeding from the Arch of the ordinary *Azygos*, is afterwards diſtributed in the ſame manner as the other, on the Right Side: But this Diſpoſition, likewiſe, varies very much.

The *Azygos*, having reached below the laſt Rib, ſends off a large Branch, which, bending outward, perforates the Muſcles of the Abdomen, is ramified between their different Planes, and communicates with the like Ramifications of the laſt, or laſt two Intercoſtal Veins.

Sometimes it ſends off the *Vena Diaphragmatica Inferior*, and, alſo, gives downward to the firſt, or firſt two tranſverſe Apophyſes of the *Vertebræ Lumbares*, a Branch which forms the firſt *Venæ Lumbares Dextræ*.

Theſe Communications between the laſt Intercoſtal, and firſt Lumbar Veins, are very irregular, being ſometimes by a Series of oppoſite Angles, ſometimes by Areolæ, and ſometimes by a reticular Texture. Sometimes the Extremity of the *Vena Azygos* communicates either mediately, or immediately, with the *Vena Adipoſa*, and even with the *Vena Spermatica*.

Venæ Pectorales Internæ.

The *Pectorales Internæ* are ſmall Veins diſpoſed in Pairs, towards the Right and Left Hand, behind the *Sternum*, and Parts near it, including the *Diaphragmaticæ Superiores*, or *Pericardio-diaphragmaticæ*, *Mediaſtinæ*, *Mammariæ Internæ*, *Thymicæ*, *Pericardiæ*, and *Gutturales*, or *Trachealis*.

All theſe ſmall Veins are divided into Right and Left; and theſe are both diſtributed much in the ſame manner; but they differ in their Origin, becauſe of the Inequality in the Biſurcation of the *Cava Superior*.

The Right *Vena Mediaſtina* goes out anteriorly from the Trunk of the ſuperior Cava, a little above the Origin of the *Azygos*; the Left comes from the *Subclavia*.

The Right ſuperior *Diaphragmatica*, or *Pericardia Diaphragmatica*, comes anteriorly from the Root of the Biſurcation near the *Mediaſtina*; and is diſtributed by ſeveral Branches to the upper, fore, and back Parts of the *Pericardium*, communicating with thoſe of the Left *Diaphragmatica*, and accompanying the Nerve of the ſame Name. The Left ſuperior *Diaphragmatica* comes from the Left *Subclavian*, a little below the Origin of the *Mammaria*.

The Right internal *Mammaria* ariſes anteriorly from the *Vena Cava*, a little below the Angle of the Biſurcation: It runs along the neareſt internal or poſterior Edge of the *Sternum*; and on the cartilaginous Extremities of the Right Ribs, together with the Artery of the ſame Name. Having reached near the Diaphragm, it ſends it a Branch, which runs toward the tendinous Plane, and communicates with the common diaphragmatic Veins.

Afterwards this Mammary Vein gives ſmall Branches to the *Mediaſtinum*; and others, between the Ribs, to the Integuments; of which thoſe that paſs between, and under, the Cartilages of the laſt true Ribs, run down on the inner or poſterior Side of the *Muſculi Recti Abdominis*, being ramified among their fleſhy Fibres, and communicating, really, with the Epigaſtric Veins, by ſeveral ſmall Twigs.

The Left internal *Mammaria* ariſes anteriorly from the Left *Subclavian*, oppoſite to the Cartilage, or anterior Extremity of the firſt true Rib.

The Right *Vena Thymica*, when it ariſes ſeparately, goes out from the Biſurcation; and when it is wanting, the *Thymus*, from whence it takes its Name, is furniſhed by the *Gutturalis*, or ſome other neighbouring Vein: This Vein often reaches no lower than the inferior Part of the *Thymus*; and the Left Vein of the ſame Name comes from the Left Subclavian, almoſt oppoſite to the Sternum.

The Right *Pericardia* ſeems to go out rather from the Origin of the Right Subclavian, than from the Trunk of the ſuperior Cava; but in this there are many Varieties. It goes to the upper Side of the Pericardium, and other neighbouring Parts. The Left Pericardia comes ſometimes from the Left Subclavian, before the *Mammaria*; and ſometimes from the *Mammaria*, or *Diaphragmatica Superior*, on the ſame Side.

The Right *Gutturalis*, or *Trachealis*, goes out from the upper Part of the Biſurcation, above the *Mammaria* of the ſame Side, ſometimes more backward, and ſometimes from the *Subclavia*: It is diſtributed to the *Glandulæ Thyroideæ*, *Trachea Arteria*, *Muſculi Sterno-hyoidæi*, *Thymus*, and *Glandulæ Bronchiales*: It communicates by lateral Branches, more or leſs contorted, with the internal Jugular Vein, and ſometimes by another Branch, with a ſmall Vein, which the internal Jugular ſends to the *Glandula Thyroides*. The Left *Gutturalis* comes from the upper or poſterior Part of the Left Subclavian, near its Origin.

The ſmalleſt internal Pectoral Veins do not always ariſe ſeparately, but have ſometimes a ſmall common Trunk, eſpecially on the Right Side; and, of all theſe ſmall Veins, the *Mammaria Interna* is the moſt conſiderable.

Venæ Subclaviæ.

The Right Subclavian Vein is very ſhort, and its Courſe very oblique; ſo that it appears to ariſe higher than the Left Vein: It ſends off, firſt of all, four large Branches, the *Vertebralis*, which is the firſt and moſt poſterior; the *Jugularis Interna* and *Externa*, and the *Axillaris*.

The Left *Subclavian* ſeems to aſcend but very little, after the Biſurcation; becauſe it runs farther, and more tranſverſely, than the Right: And in this Courſe it covers the Origin of three large Arteries, which come from the Curvature of the Aorta: It ſends off four large Branches, beſides the ſmall Pectoral Veins, and receives the *Ductus Thoracicus*.

It, alſo, gives off, before its principal Diviſion, a ſmall Trunk for the Left ſuperior Intercoſtals, which are ſometimes ſix in Number, and communicate with the inferior Intercoſtals, and with a Branch of the *Vena Azygos*. This ſmall common Intercoſtal Trunk furniſhes, alſo, the Left *Bronchialis*.

Each Subclavian Vein, near the Middle of the *Clavicula*, ſends off a Branch, called *Cephalica*, which deſcends near the Surface of the Body, between the *Deltoides* and *Pectoralis Major*, and reaches the Arm.

Venæ Jugulares Externæ.

Each external Jugular Vein ariſes from the Subclavian, on the ſame Side; ſometimes from the *Axillaris*, and ſometimes from the Union of theſe two Veins. The Right and Left do not always ariſe in the ſame manner; for ſometimes the Right comes from the Subclavian, and the Left from the internal Jugular,

gular, on the ſame Side: They run up between the *Muſculus Cutaneus*, and *Sterno-maſtoidæus*, being covered by the former, and croſſing over the latter.

Sometimes they are double from their very Origins; and when they are ſingle, each of them divides afterwards into two, one anterior, and the other poſterior, or rather ſuperior. The anterior Vein goes to the Throat and Face, running up toward the Angle of the lower Jaw; and the poſterior goes to the Temples and Occiput.

Vena Jugularis Externa anterior.

The anterior external Jugular Vein is often a Branch of the *Jugularis Interna*; and ſometimes ariſes from the Communications of the two *Jugulares*, in ſuch a manner as that it cannot be ſaid to belong more to the one than to the other. Sometimes, but very rarely, it comes from the *Vena Axillaris*.

It runs up toward the lateral Part of the lower Jaw, between the Angle and the Chin, like a *Vena Maxillaris*; and ſends ſeveral Branches forwards, backwards, and inwards.

Poſteriorly it gives, 1. A large Branch on the Side of the upper Part of the Larynx, which communicates with the *Jugularis Interna*; and, likewiſe, with a large ſhort Branch of the poſterior external Jugular. 2. A ſmall Branch which has the ſame Communication, but which is not always to be found. 3. Another ſmall Branch, a little below the lower Jaw, which communicates with the poſterior external Jugular.

Anteriorly it ſends ſeveral Branches to the Muſcles of the *Larynx*, *Sterno-hyoidæi*, *Thyro-hyoidæi*, and to the Integuments; and below the *Larynx*, it ſends communicating Branches to the anterior external Jugular of the other Side.

A little higher, oppoſite to the *Cartilago Thyroides*, it gives off a tranſverſe Branch, which runs on the anterior and lower P. t of the *Muſculi Sterno-maſtoidæi*; and communicates with the Jugular of the other Side, though not always by a Vein of the ſame Kind.

The ſuperior and inferior tranſverſe Branches communicate on each Side, by Branches more or leſs perpendicular; and ſend a ſmall Branch to the *Muſculus Quadratus* of the Chin, to the *Muſculus Cutaneus*, and Integuments.

It ſends another large Branch anteriorly towards the Symphyſis of the lower Jaw, which, after having ſupplied the Maxillary Glands, is diſtributed to the Digaſtric Muſcle, to the Chin and under Lip.

Interiorly at the ſame Place, it ſends out a large Branch, which furniſhes the *Glandulæ Sublinguales*, runs down toward the *Cornua* of the *Os Hyoides*, to communicate with ſome Branches of the *Jugularis Interna*, and ſends ſeveral Branches to the Tongue, called *Venæ Raninæ*: It gives off, alſo, a ſmall Branch, which running upon the *Muſculus Labiorum Triangularis*, to the Commiſſure of the Lips, is diſtributed to the neighbouring Parts.

The ſame Branch which gives out the *Venæ Raninæ*, detaches another to the lateral Parts of the *Septum Palati*, which is diſtributed to the *Amygdalæ*, and to the Uvula; and ſends Branches forward to the Membrane, which lines the Arch of the Palate. Another Branch goes out from it to the *Pterygoidæus Internus*, *Periſtaphylini*, and *Cephalo-pharyngæi*.

Afterwards the Trunk of the anterior external Jugular Vein runs up on the *Muſculus Triangularis*, where it receives the Name of *Vena Triangularis*, in a winding Courſe, from the Angle of the lower Jaw to the great or internal Angle of the Orbit, ſending Branches on each Side to the Muſcles and Integuments.

Theſe Branches communicate with each other, eſpecially one which paſſes under the *Zygoma*, behind the *Os Malæ*, to the inferior Orbitary or *Spheno-maxillary* Fiſſure; and another ſmall Branch, which runs along the inferior Portion of the orbitary Muſcle, to the ſmall or external Angle of the Eye, where it communicates with the Temporal and Frontal Ramifications.

It is here to be obſerved, that, under the Angle of the lower Jaw, there is a great Variety of Communications between the external and internal jugular Veins; and, alſo, a great Variety in the Diſtribution of theſe Veins.

Almoſt all the Ramifications, which, at this Place, go from the external jugular Vein, to be diſtributed on the upper Part of the Throat, and on the Face, in ſome Subjects, ariſe, in other Subjects, from the internal Jugular; and, ſometimes, one Part of them comes from the external Jugular, the reſt from the internal.

The Trunk of the *Vena Angularis*, having reached the Bones of the Noſe, ſends out a Branch through the lateral Cartilages of the Noſe, which is diſtributed to the *Nares*; and another, which runs down, in a winding Courſe, to the upper Lip.

At the great, or inner Angle of the Eye, the ſame Trunk ſends off ſeveral other Branches; the firſt of which goes to the Root of the Noſe, and communicating with its Fellow, from the other Side, gives ſeveral ſmall Veins to the Holes of the *Oſſa Naſi*.

The ſecond Branch runs up on the Forehead, by the Name of *Vena Frontalis*, antiently *Præparata*; and is diſtributed to each Side, communicating with its Fellow, when any ſuch Vein is found.

The third Branch enters the Orbit, in a winding Courſe, on one Side of the cartilaginous Pulley, and communicates with the Sinuſes of the *Dura Mater*, by the orbitary Sinus of the Eye.

The fourth Branch goes along the *Muſculus Superciliaris*, and the upper Part of the *Orbicularis*, to the ſmall, or external Angle of the Eye, to communicate with the *Vena Temporalis*, and with that Vein which runs along the lower Part of the orbicular Muſcle, with which it forms a kind of Circle.

Vena Jugularis Externa posterior, sive superior.

The poſterior, or ſuperior external jugular Vein, runs up toward the parotid Gland, and lower anterior Part of the Eye, giving out ſeveral conſiderable Branches toward each Side.

At its Origin it ſends out, poſteriorly, a principal Branch, with its Ramifications, to the Muſcles which cover the *Scapula*, and Joint of the *Humerus*, commonly called *Vena Muſcularis*, and which might be named *Superhumeralis*.

A little higher, it gives off the *Vena Cervicalis*, which goes to the vertebral Muſcles of the Neck; this Vein communicates with the *Humeralis*, by ſeveral *Areolæ*, or venous Maſhes, and they are both ramified in different manners.

Theſe Ramifications and Communications are, in Part, covered by the *Muſculus Trapezius*, and communicate, alſo, with ſome Branches of the *Vena Occipitalis*, and with a Branch of the ſuperior intercoſtal Vein, which perforates the firſt intercoſtal Muſcle.

Near the cervical Vein, but a little more outward, it gives off, ſometimes, the ſmall *Vena Cephalica*, which runs down between the *Pectoralis major* and *Deltoides*, and unites with the *Vena Cephalica* of the Arm.

Backward it detaches the *Vena Occipitalis*, which is diſtributed on the *Occiput*, and, ſometimes, comes from the *Vena Vertebralis*, or *Axillaris*. It, alſo, ſends out a ſmall Vein, which enters the *Cranium* by the poſterior maſtoide Hole, and terminates in one of the lateral Sinuſes of the *Dura Mater*. This Branch comes, ſometimes, from another Vein.

Having reached as far as the parotid Gland, it forms Communications with the anterior external Jugular, under the Angle of the lower Jaw, and then paſſes through the parotid Gland, between that Angle and the Condyle, giving off a large Branch which communicates with another Branch common to the internal and anterior external Jugulars.

Sometimes there are ſeveral Branches, which, having run a very little Way, unite together, and repreſent the ſhort large Branch, forming *Areolæ*, or Maſhes, through which the Nerves paſs.

Afterwards, it paſſes before the Ear, taking the Name of *Vena Temporalis*, which is diſtributed to the Temples, and lateral Parts of the Head, towards the *Occiput* and Forehead. Sometimes the temporal Vein has two Origins, whereof one is from the *Jugularis interna*.

The temporal Vein of one Side communicates above, with its Fellow on the other Side; before, with the *Vena Frontalis*; and behind, with the *Vena Occipitalis*. Oppoſite to the Ear it gives out a large Branch, one Ramification of which runs under the lower Edge of the *Zygoma*; and, then returning, communicates with another Ramification from the ſame Jugular, a little below the Condyle of the lower Jaw, forming a kind of Iſland irregularly round.

Behind this Condyle, it gives Branches to the Temporal Muſcle, to the neighbouring Parts of the upper Jaw, and to the Inſide of the lower Jaw, almoſt in the ſame manner as is done by the Arteries.

Only one of theſe Branches runs from without inward, between the Condyloide and Coronoide Apophyſes, to be diſtributed to the *Muſculus Temporalis* and *Pterygoidæi*, ſending off a Ramification to the Maſſeter, in its Paſſage.

Vena Jugularis interna.

The internal Jugular Vein is the largeſt of all thoſe that go to the Head, though not ſo large as it ſeems to be when injected.

It runs up behind the *Sterno-maſtoidæus*, and *Omo-hyoidæus*, which it croſſes, along the Sides of the *Vertebræ* of the Neck, by the Edge of the *Longus Colli*, to the *Foſſula* in the *Foramen Lacerum* of the *Baſis Cranii*.

The firſt Branches which it ſends off, are ſmall, and go to the *Thyroide* Glands: About two Fingers-breadth, higher up, it detaches a middle-ſized Branch, which runs laterally toward the *Larynx*, and may be named *Vena Gutturalis*.

This guttural Vein divides, principally, into three Branches, the loweſt of which goes to the *Thyroide* Gland, and neighbouring Muſcles; the middle Branch to the *Larynx*, and *Muſculi Thyroidæi*, and the third runs upward, to the great Communication between the two *Jugulares*. In this, however, there is ſome Variety, and I have ſeen the Left guttural Vein go out from the *Axillaris*.

About the ſame Diſtance upward, almoſt oppoſite to the *Os Hyoides*, the internal Jugular gives another Branch, which ſends Ramifications to the Muſcles belonging to that Bone, and others, which communicate with the foregoing Branch: This other Branch runs upward toward the Parotid Gland, and Angle of the lower Jaw, where it ſends communicating Branches forward and backward, to the two external Jugulars.

It is at this Place, alſo, that the internal Jugular ſometimes produces the *Vena Maxillaris Interna*, and all its Ramifications.

The internal Jugular ſends another Branch backward, which is diſtributed to the *Occiput*, where it communicates with a Branch of the *Vertebralis*, and through the poſterior *Maſtoide* Hole, with the lateral *Sinus* of the *Dura Mater*: This Communication is ſometimes by an *Anaſtomoſis*, with a Branch of the external Jugular, or of the *Cervicalis*, which goes thither.

Afterwards it reaches the *Foramen Lacerum* of the *Baſis Cranii*, bending a little, and ſending off ſmall Twigs to the *Pharynx*, and neighbouring Muſcles.

Vena Vertebralis.

The vertebral Vein ariſes poſteriorly from the *Subclavia*, or *Axillaris*, ſometimes by two Stems, ſometimes by one, which ſoon afterwards divides into two.

The firſt and principal Stem gives out a Branch called *Vena Cervicalis*, which is diſtributed to the neighbouring Muſcles, and afterwards runs up through the Holes of the tranſverſe Apophyſes of the *Vertebræ Colli*. This cervical Branch comes ſometimes from the *Axillaris*.

The other Stem of the vertebral Vein runs up on the Side of the *Vertebræ*, and, having reached the fourth, or, ſometimes, higher, it runs in between the tranſverſe Apophyſes of that *Vertebra*, and of the fifth, to join the firſt or principal Stem.

Thus the vertebral Vein accompanies the Artery of the ſame Name, ſometimes in one Trunk, ſometimes in ſeveral Stems, through all the Holes of the tranſverſe Apophyſes of the *Vertebræ Colli*, all the way to the great *Foramen Occipitale*, communicating with the occipital Veins, and ſmall occipital Sinuſes of the *Dura Mater*.

In its Paſſage it gives off one Branch, which enters by the poſterior *condyloide* Hole of the *Os Occipitis*, and communicates with the lateral *Sinus* of the *Dura Mater*; but it is not always to be met with.

As theſe Veins run through the Holes in the tranſverſe Apophyſes, they ſend Branches forward to the anterior Muſcles of the Neck, and to the ſmall interior Muſcles of the Head.

Other Branches go, alſo, outward, and backward, to the *Muſculi Tranſverſales*, and *Vertebrales Colli*, and inward to the great Canal of the ſpinal Marrow, where they form Sinuſes, which communicate with thoſe on the other Side.

Theſe vertebral Sinuſes are pretty numerous, and placed one above another, all the way to the *Occiput*; the lower communicate with the upper, and at the great Foramen of the *Os Occipitis* there is a Communication between them and the occipital Sinuſes of the *Dura Mater*.

Vena Axillaris.

The Subclavian Vein, having ſent off the Branches already deſcribed, goes out of the Thorax, and paſſes before the anterior Portion of the *Muſculus Scalenus*, and between the firſt Rib and the Clavicle; to the *Axilla*: Through this Courſe it takes the Name of *Vena Axillaris*, and gives off ſeveral Branches, the principal of which are, the *Venæ Muſculares*, *Thoracicæ*, and *Vena Cephalica*, which is ſometimes double.

The firſt Veins which it ſends off, are the *Muſculares*, diſtributed to the middle Portion of the *Muſculus Trapezius*, to the *Angularis*, *Infraſpinatus* and *Subſcapularis*; and as ſome of theſe Branches go to the Shoulder exteriorly, others interiorly, the *Venæ Scapulares* are diſtinguiſhed into external and internal.

A little before the *Axillaris* reaches the *Axilla*, it ſends out the *Venæ Thoracicæ*, one of which is ſuperior, called, alſo, *Mammaria Externa*, and the other inferior: It likewiſe ſends Ramifications to the *Muſculus Subſcapularis*, *Teres major*, *Teres minor*, *Supraſpinatus*, *Latiſſimus Dorſi*, *Serratus major*, *Pectoralis minor*, *Pectoralis major*, and to the Glands of the *Axilla*; and, ſometimes, gives a communicating Branch to the *Vena Baſilica*.

The *Axillaris*, having reached the Side of the Head of the *Os Humeri*, produces a very conſiderable Branch, named *Vena Cephalica*; and afterwards runs along the Arm, by the Name of

Vena Baſilica, which, however, appears, ſometimes, to be rather a Branch, than a Continuation, of the Trunk of the *Axillaris*; in which Caſe, the *Cephalica* and *Baſilica* might be look'd upon as two principal Branches of the axillary Vein.

Vena Cephalica.

The cephalic Vein, which is a Branch of the *Axillaris*, at a ſmall Diſtance from its Origin, joins the ſmall *Cephalica*, which runs down from the *Subclavia*, or *Jugularis externa*, having, till then, run near the Surface of the Body between the *Deltoides* and *Pectoralis major*, and, ſometimes, theſe two Veins communicate before their Union.

The great *Cephalica* runs down between the Tendons of the laſt-mentioned Muſcles, and along the outer Edge of the external Portion of the *Biceps*, communicating ſeveral times with the *Vena Baſilica*, and ſending ſmall Ramifications, on each Side, to the neighbouring Muſcles, Fat, and Skin. Some Branches go out from its upper Part, which, lower down, unite again with the Trunk.

A little below the external Condyle of the *Os Humeri* it detaches a Branch backward, which runs up between the *Muſculus Brachialis* and the upper Portion of the *Supinator Longus*; and afterwards bends back between the *Os Humeri* and *Anconæus Externus*, where it communicates with ſome Branches of the *Baſilica*.

Having reached very near the Fold of the Arm, it is divided into two principal Branches, one long, the other ſhort: The long Branch is named *Radialis Externa*, and the ſhort one may be called *Mediana Cephalica*, to diſtinguiſh it from another *Mediana*, which is a ſhort Branch of the *Baſilica*, and therefore ought to be called *Vena Mediana Baſilica*.

The external radial Vein runs along the *Radius* between the Muſcles and Integuments, giving off Branches toward both Sides, which communicate with other Branches of the ſame Vein, and with ſome from the *Baſilica*, forming *Areolæ*, much in the ſame manner as the *Saphena* does in the lower Extremity.

The *Mediana Cephalica* runs down obliquely toward the middle of the Fold of the Arm, under the Integuments, and over the Tendon of the Biceps, where it joins a ſhort Branch of the ſame Kind from the *Baſilica*, which I have already named *Mediana Baſilica*. Theſe two *Medianæ* unite in an Angle, the Apex of which is turned downward.

From this angular Union, or Anaſtomoſis, a conſiderable Branch goes out, which runs down on the fore Arm, uniting on one Side with the *Vena Cephalica*, and communicating, on the other, with the *Baſilica*, by ſeveral irregular *Areolæ*. The Name of *Mediana* is given to this large Branch, as well as to the two other ſhort ones, by the Union of which it is formed; but, that they may not be confounded, this large Branch may be termed *Mediana major*, or *media*, the Names already given to the other two being retained.

From this Union of the two lateral *Medianæ*, and, ſometimes, from the Origin of the *Mediana Media*, which is the true *Mediana* of *Riolanus*, a Branch goes out, which runs down on the Inſide of the fore Arm, oppoſite to the interoſſeous Ligament, and is called *Vena Cubiti Profunda*. It goes to the neighbouring Muſcles, and communicates with the other Veins of the fore Arms. The *Mediana Cephalica* ſometimes ſends down a long Branch, called *Radialis Interna*, which lies almoſt parallel to the *Radialis Externa*.

Afterwards, the *Cephalica*, having reached the Extremity of the *Radius*, is diſtributed, by numerous *Areolæ*, almoſt in the ſame Courſe with the radial Artery.

A particular Branch goes out from it, which runs more or leſs ſuperficially, between the Thumb and *Metacarpus*, by the Name of *Cephalica Pollicis*. The *Areolæ* furniſh the interoſſeous Muſcles and Integuments, and communicate with a ſmall Branch from the *Baſilica*, called, by the Antients, *Salvatella*.

Vena Basilica.

The Antients termed the baſilic Vein of the Right Arm the Vein of the Liver, or *Vena Hepatica Brachii*; and that of the Left Arm the Vein of the Spleen, or *Vena Splenica Brachii*: It has ſometimes a double Origin, by a Branch of Communication with the Trunk of the *Axillaris*.

It ſends off, firſt of all, under the Head of the *Os Humeri*, a pretty large Branch, which paſſes almoſt tranſverſly round the Neck of that Bone, from within backward, and from behind outward, running up on the *Scapula*, where it is ramified on the *Deltoides*, and communicates with the *Venæ Scapulares externæ*. This Branch may be named *Vena Subhumeralis*, or *Articularis*, as the Artery which lies in the ſame Place, they both having much the ſame Courſe.

This articular Vein ſends down two principal Branches, one of which runs along the Inſide of the Bone, to which, and to the

the *Periosteum*, it gives small Veins: The other turns forward, toward the middle of the Arm, between the Bone and the *Biceps*, and communicates with the *Cephalica*.

Below the Neck of the *Os Humeri*, near the Hollow of the *Axilla*, and behind the Tendon of the *Pectoralis major*, the *Basilica* sends out a considerable Branch, which runs down on the Side of the brachial Artery, and furnishes the neighbouring Muscles on both Sides. This Vein is named *Profunda Brachii*, or *Profunda superior*.

Immediately afterwards, the *Basilica* detaches two or three small Veins, which run down very closely joined to the brachial Artery, surrounding it, at different Distances, by small Twigs, which communicate with each other: These Veins might be named *Venæ Satellites Arteriæ Brachiales*.

These small Veins, which often arise from the *Profunda Superior*, communicate with the *Basilica* and *Cephalica*; and, having reached the Fold of the Arm, they divide like the Artery; and the same Divisions are continued along the whole fore Arm, through all which Space they accompany and surround the arterial Branches, in the manner already said.

Afterwards the *Basilica* continues its Course along the Inside of the *Os Humeri*, between the Muscles and Integuments, forming many Communications with the *Vena Profunda*, *Satellites*, and *Cephalica*, and supplying the Muscles and Integuments.

Having reached the inner Condyle, and having sent off obliquely, in the Fold of the Arm, the *Mediana Basilica*, it runs along the *Ulna*, between the Integuments and Muscles, a little toward the Outside, by the Name of *Cubitalis Externa*, still communicating with the *Profunda*, *Satellites*, and *Cephalica*.

Having detached the *Mediana Basilica*, it sends out another Branch, which runs down along the Inside of the fore Arm near the *Ulna*, and communicates with the *Mediana major*. This Branch may be named *Cubitalis Interna*.

The *Basilica*, having, at length, reached the Extremity of the *Ulna*, sends several Branches to the convex Side of the *Carpus*; one of which, named *Salvatella*, goes to that Side of the little Finger next the Ring Finger, having first communicated with the *Cephalica*, by means of the venal *Areolæ*, conspicuous on the Back of the Hand: In the other Fingers this Vein follows nearly the same Course with the Artery.

In general, the external or superficial Veins of the fore Arm are larger than the internal, but they are accompanied only by small Arteries; whereas the deep Veins accompany large Arteries.

Vena Cava Inferior.

The inferior *Vena Cava*, having run down about a quarter of an Inch from the Right Auricle of the Heart, within the *Pericardium*, as has been already said, pierces that Membrane, and the tendinous Portion of the Diaphragm, which adhere very closely to each other.

At this Place it gives off the *Venæ Diaphragmaticæ*, or *Phrenicæ*, which are distributed to the Diaphragm, and appear principally on its lower Side, one toward the Right Hand, and one toward the Left: The right Vein is more backward, and lower, than the left; the left is distributed partly to the *Pericardium*, and partly to the Diaphragm; and sometimes they send Ramifications to the *Capsulæ Renales*, much in the same manner as the *Arteriæ Phrenicæ*.

The inferior *Cava*, having perforated the Diaphragm, passes through the posterior Part of the great Fissure of the Liver, penetrating a little into the Substance of that *Viscus*, between the great Lobe and the *Lobulus Spigelii*, being, however, covered but very little, on the back Side, by the Substance of the Liver, till it reaches the *Lobulus*.

In its Passage it sends off, commonly, three large Branches, called *Venæ Hepaticæ*, which are ramified in the Liver. Sometimes there are only two, and sometimes four.

Besides these large Branches, it sends out some other small ones, either before, or immediately after, it goes out of the Liver; which, according to some Anatomists, answer to the Branches of the hepatic Artery, as the large Branches do to those of the *Venæ Portæ*.

In the *Fœtus*, as the *Vena Cava* passes by the Liver, it gives off the *Ductus Venosus*, which communicates with the *Sinus* of the *Vena Porta*, and, in Adults, is changed to a flat Ligament.

After its Passage through the Liver, the *Vena Cava* turns from before backward, and from right to left, toward the *Spina Dorsi*, placing itself on the right Side of the *Aorta*, which it accompanies from thence downward.

Having got as low as the *Arteriæ Renales*, it gives off the Veins of the same Name, termed, formerly, *Venæ Emulgentes*, and which are the largest of all the Veins that go from the *Cava Inferior*, from the Liver to the Bifurcation.

The right renal Vein is the shortest, and runs down a little obliquely, because of the Situation of the Kidney: The left Vein, which is the longest, crosses on the fore Side of the Trunk of the *Aorta*, immediately above the superior mesenteric Artery; and both Veins accompany the renal Arteries.

They send up the *Venæ Capsulares*, which go to the *Glandulæ Renales*; and downward, the *Venæ Adiposæ*, which go to the pinguious Covering of the Kidneys; and, ordinarily, the left renal Vein furnishes the left spermatic Vein: Afterward, they run to the *Sinus*, or Cavity of the Kidneys, in the Substance of which they are distributed, by numerous Ramifications.

A little below the renal Veins, the Trunk of the *Cava* sends out anteriorly, toward the right Side, the right *Vena Spermatica*. The left spermatic Vein comes, commonly, though not always, from the left *Renalis*; both Veins accompany the spermatic Arteries to the Parts to be mentioned hereafter.

In their Passage they send several small Branches, on each Side, to the *Peritonæum* and *Mesentery*; where they seem to be joined, by *Anastomoses*, with the *Venæ Mesaraicæ*, and, consequently, with the *Venæ Portæ*.

They sometimes send a considerable Branch over the iliac Muscle, which, afterwards, dividing into two, one Branch runs up to the *Membrana Adiposa* of the Kidneys, the other runs down on the last-mentioned Muscle.

About the same Height with the spermatic Vein, the inferior *Cava* sends off posteriorly, in some Subjects, a Branch which runs upward, and communicates with the *Vena Azygos*. Sometimes this Branch goes out from one or other of the *Renales*, and appears to be a true Continuation of the Extremity of the *Azygos*.

The *Cava* sends, also, off posteriorly, the *Venæ Lumbares*, which commonly arise in Pairs, in the same manner as the Arteries of the same Name go out from the *Aorta*. These may be divided into superior and inferior Veins.

Their Origins vary in different manners: Sometimes the *Cava* gives off a Branch to each Side below the first *Vertebra* of the Loins, which, like a common Trunk, furnishes the lumbar Veins: This Branch communicates with the *Azygos*.

Sometimes a considerable Branch goes out from the lower Extremity of the *Cava*, near the Bifurcation, principally on the right Side; which, afterwards, running up between the Bodies and transverse *Apophyses* of the *Vertebræ*, detaches the *Venæ Lumbares*, and communicates with the *Azygos*.

Sometimes a like Branch comes from the Beginning of the left *Vena Iliaca*, and, running upon that Side in the same manner, produces the *Lumbares*. This Branch, also, communicates with the *Azygos*, and with the superior or descending *Ramus Lumbaris*.

The *Venæ Lumbares*, on one Side, communicate, by transverse Branches, with those of the other Side, and, also, with each other, by Branches more or less longitudinal. The first and second often go from the *Azygos*, and thereby they communicate with the intercostal Veins.

The lumbar Veins send small Capillaries, in their Passage, to the Substance of the Bodies of the *Vertebræ*; and they are distributed to the Muscles of the Abdomen, *Quadratus Lumborum*, *Psoas*, and *Iliacus*. They send Branches, also, to the neighbouring vertebral Muscles, and to the Canal of the Spine; and communicate with the venous Sinuses, in the same manner as the Intercostals.

The inferior *Cava*, having reached as low as the last *Vertebra* of the Loins, and near the Bifurcation of the *Aorta*, runs in behind the right iliac Artery, and there is divided into two subaltern Trunks, called the right and left iliac Veins.

The Extremity of the Trunk of the *Vena Cava* passes, in some Subjects, behind the Origin of the right iliac Artery; in others, it is the left iliac Vein which passes there, and, consequently, crosses the right iliac Artery: Afterward, the left iliac Vein accompanies the inside of the left Artery, till it goes out of the Abdomen: Therefore the iliac Veins lie on the Insides of the Arteries at this Place.

From this Bifurcation of the *Vena Cava*, and, often, from the Origin of the left *Iliaca*, the *Vena Sacra* goes out, and accompanies the Artery of the same Name in its Distribution to the *Os Sacrum*, to the Nerves which lie there, and to the Membranes which cover both Sides of that Bone.

Venæ Iliacæ.

Each original iliac Vein is divided, on the Side of the *Os Sacrum*, much after the same manner as the Arteries, into two large Trunks, or secondary iliac Veins: This second Bifurcation is about a Finger's-breadth below that of the iliac Arteries.

One of these Trunks is named *Vena Iliaca Externa*, or anterior; the other *Interna*, or posterior. The external Vein is, also, named, simply, *Iliaca*; and the internal, *Hypogastrica*. The external Vein seems to be the true Continuation of the

Trunk, and the *Hypogaſtrica* only a Branch. I here ſpeak of adult Bodies; becauſe, in the *Fœtus*, there is a conſiderable Variation.

Theſe Veins follow nearly the Courſe and Diſtribution of the iliac Arteries, except that the hypogaſtric Vein does not ſend off the *Vena Umbilicalis*. The external iliac Veins lie more or leſs on the inſide of the Arteries, in the manner already ſaid; but the hypogaſtric Veins, in the Bottom of the *Pelvis*, lie almoſt behind the Arteries, on the ſame Side.

From the common Trunk of the iliac Veins, and, ſometimes, from the Origin of the *Iliaca Externa*, a particular Branch goes out, which is diſtributed to the *Muſculus Pſoas*, *Iliacus*, and *Quadratus Lumborum*; and, afterwards, ſends a Branch on the fore Side of the laſt tranſverſe *Apophyſis* of the Loins, to communicate with the laſt lumbar Vein.

The external Iliac, a little before it leaves the Abdomen, near the *Ligamentum Fallopii*, lying upon the *Pſoas* and iliac Muſcles, gives off almoſt the ſame Branches with the Artery of the ſame Name, and follows the ſame Courſe: The principal Branches are theſe:

A little before it goes out of the Abdomen, it ſends off, from the Outſide, a ſmall Branch, which runs up along the *Criſta* of the *Os Ilium*, and gives Branches, on each Side, to the lateral and poſterior lower Portions of the *Muſculi Abdominis*, and to the *Muſculus Iliacus*.

From the inſide, before it leaves the Abdomen, it ſends off the *Vena Epigaſtrica*, which, having furniſhed ſome ſmall Ramifications to the neighbouring conglobated Glands, runs up along the inſide of the *Muſculi Recti*, on which it is ramified both ways; as, alſo, on the broad Muſcles of the Abdomen, by other ſmall Branches, which penetrate, from within, outwards.

Afterwards, the *Vena Epigaſtrica* runs upward, and joins the Ramifications of the *Mammaria*, by an equal Number, accompanying the epigaſtric Artery; from the inſide of the epigaſtric Vein a Branch is, ſometimes, detached to the *Muſculus Obturator Internus*, where it joins another Branch, named *Vena Obturatrix*.

Before the iliac Vein gets from under the *Ligamentum Fallopii*, it ſends ſeveral ſmall Ramifications to the neighbouring lymphatic Glands; and, immediately afterwards, loſing the Name of *Iliaca*, it takes that of the *Cruralis*.

Vena Hypogastrica.

The hypogaſtric, or internal iliac Vein, runs behind the Artery of the ſame Name, making the ſame kind of Arch, from which the following Branches go out.

From the poſterior, or convex Part of the Arch, it gives a Branch to the ſuperior lateral Part of the *Os Sacrum*, which is diſtributed to the *Muſculus Sacer*, or *Tranſverſo-ſpinalis Lumborum*, and other Muſcles thereabouts, and to the Cavity of the Bone, which it enters through the firſt great Hole.

A little lower, on the ſame Side, it ſends out another, which is diſtributed much in the ſame manner with the former, and enters the ſecond Hole.

From the external lateral Part of the ſame Arch, a little anteriorly, it ſends out a large Branch, which runs behind the great ſciatic *Sinus*, and is diſtributed to the *Muſculi Glutæi*, *Pyriformis*, and *Gemelli*.

Lower down, the ſame lateral Part of the hypogaſtric Vein gives out another large Branch, which, having run a little way, detaches ſeveral Ramifications; and, afterward, reaching the *Foramen Ovale* of the *Os Innominatum*, perforates the obturator Muſcles, communicates with the crural Vein, and is diſtributed to the *Muſculus Pectineus*, *Triceps*, and neighbouring Parts. This Vein is termed *Obturatrix*, from its paſſing through the Muſcles of that Name.

Among the Branches ſent off by the *Vena Obturatrix*, before it perforates the Muſcles, one is ſituated exteriorly, which runs toward the ſciatic *Sinus* to the *Muſculus Iliacus*, the ſuperior Part of the *Obturator Internus*, and to the *Os Ilium*, near its Symphyſis with the *Os Iſchium*.

Interiorly, the ſame obturator Vein ſends off another Branch, which is diſtributed to the Ureters, Bladder, and internal Parts of Generation in both Sexes. It communicates with the ſpermatic Veins, and is more conſiderable in Women than in Men.

Laſtly, The hypogaſtric Vein runs backward, and goes out of the *Pelvis*, above the Ligament which lies between the interior lateral Part of the *Os Sacrum*, and Spine of the *Iſchium*; and, as it goes out, it is ramified, principally, upward and downward.

It ſends a large Branch upward, to the lower Part of the *Os Sacrum*, and two, or more, downward; which, running behind the ſame Ligament, are diſtributed to the Buttocks, *Anus*, neighbouring Portion of the *Muſculus Pectineus*, and to the external Parts of Generation, nearly in the ſame manner with the Artery which accompanies them.

The Veins that go to the *Anus*, are termed *Hæmorrhoidales Externæ*; and they that go to the Parts of Generation, *Pudicæ Internæ*. The external *Hæmorrhoidales* communicate with the internal Veins of the ſame Name, which come from the ſmall *Vena Meſaraica*, one of the Branches of the *Vena Portæ*, as we ſhall ſee hereafter.

Vena Cruralis.

The crural Vein goes out under the *Ligamentum Fallopii*, on the inſide of the crural Artery, and immediately gives ſmall Branches to the inguinal Glands, the *Muſculus Pectineus*, and Parts of Generation: Theſe laſt are named *Pudicæ Externæ*, and evidently communicate with the internal Veins of the ſame Name.

About an Inch below, where it leaves the Abdomen, the crural Vein produces a large Branch, which runs down anteriorly between the Integuments and the *Sartorius*, following the Direction of that Muſcle, almoſt all the way to the inſide of the Thigh.

This Branch, having afterwards got beyond the Condyles of the *Os Femoris*, runs down between the Integuments and inner Angle of the *Tibia*, to the fore Part of the inner Ancle, and is diſtributed to the Foot: All this large Branch is named *Vena Saphena*, or *Saphena major*.

After the Origin of the *Saphena*, as the Trunk of the crural Vein runs down, it links in between the Muſcles, and is diſtributed to all the inner or deep Parts of the lower Extremity, accompanying the crural Artery to the very Extremity of the Foot, being all along more conſiderable than the Artery, both for Capacity, and Ramifications, a Thing very common in the Veins.

As the *Saphena* is a Vein of very large Extent, I ſhall here deſcribe it all together, and afterwards return to the *Vena Cruralis*.

Vena Saphena.

The *Vena Saphena*, in its Paſſage from the Inguen to the Foot, is covered only by the Skin and Fat; immediately after its Riſe, it gives ſmall Veins to the inferior inguinal Glands; and then it gives out others more anteriorly, which, running under the Integuments, communicate with each other by numerous *Areolæ*, or Maſhes: Sometimes theſe Communications come all from the Ramifications of one Branch.

The *Saphena*, having run down on the Thigh, as low as the Middle of the *Sartorius*, ſends off to the ſame Side ſeveral Branches, which communicate with each other, and with the ſuperior Branches already mentioned; and, as they run down, they communicate again with the Trunk of the *Saphena*.

Theſe two Sorts of Communications furniſh a third collateral Kind; from which, alſo, particular Branches are detached, which communicate with each other at different Diſtances all the Way to the Knee.

Between theſe upper and lower Branches, the *Saphena* ſends backward a particular Branch, which, after being diſtributed to the Integuments which cover the *Gracilis internus* and *Triceps*, turns backward; and, a little below the Ham, runs in among the Muſcles ſituated there, and communicates with another Branch, which may be termed *Saphena minor*.

Afterwards the Trunk of the great *Saphena* runs down on the Inſide of the Tibia, lying always near the Skin; and, at the upper Part of that Bone, it ſends Branches forward, outward, and backward.

The anterior Branches go to the Integuments on the upper Part of the Leg; the poſterior, to thoſe which cover the *Gaſtrocnemii*, and communicate with the little *Saphena*; and the external Branches are, alſo, diſtributed to the Fat and Integuments; and, having reached as low as the Middle of the Tibia, it ſends a communicating Branch to the Trunk of the great *Saphena*.

From this Communication, a Branch goes out anteriorly, which runs along the Integuments of the Tibia all the Way to the outer Ancle, having in its Paſſage communicated again with the great *Saphena*.

As the *Saphena* runs down on the Inſide of the Tibia, it ſends out a Branch near the Middle of that Bone, which runs up behind the Tendons of the *Sartorius*, *Gracilis Internus*, and *Semi-nervoſus*, then between the Tibia and upper End of the *Soleus*, and is joined by an Anaſtomoſis with the Crural Vein.

It, alſo, detaches to the fore Part of the Tibia ſome Branches irregularly tranſverſe, which, having been diſtributed to the *Periоſteum* and Bone, communicate with other Branches already mentioned.

At the lower Part of the Tibia, the *Saphena* produces a conſiderable Branch, which runs obliquely forward over the Joint of the Tarſus toward the outer Ancle, ſending off ſeveral Ramifications, which communicate with each other, and with the Trunk of the *Saphena*.

Laſtly,

Laſtly, the Extremity of this Trunk paſſes on the fore Side of the inner Ancle, and runs irregularly under the Skin, along the Interſtice between the firſt two metatarſal Bones toward the great Toe, where this Vein terminates.

Having got below the inner Ancle, it ſends a Branch outward and forward, which runs under, and, in ſome meaſure, accompanies the anterior Tibial Artery. Interiorly it ſends another Branch, almoſt from the ſame Place, which paſſes under the Foot, communicating with the external Tibial Vein by irregular Arches, from which Veins are ſent to the Toes.

Laſtly, before the *Saphena* terminates at the great Toe, it detaches a kind of tranſverſe Arch over the *Metatarſus*, which communicates by ſeveral Branches with that Arch which lies on the Joint of the Tarſus, and ſends others to the Toes. This Arch gives off, alſo, another Branch, which runs up behind the outer Ancle, and communicates with the *Vena Tibialis externa*.

Continuation of the Vena Cruralis.

The Crural Vein having ſent off the *Saphena*, and the ſmall Branches for the *Pectineus*, as has been ſaid, runs down on the Thigh behind the Crural Artery. Oppoſite to the little Trochanter, it produces two large ſhort Branches, or one which afterwards divides into two, whereof one is anterior, the other poſterior.

The anterior Branch runs more or leſs tranſverſly forward, to be diſtributed to the *Vaſtus Internus*, lower Part of the *Pectineus*, and of the ſecond *Triceps*, and to the other two Muſcles of the ſame Name, running in between them as it goes from one to the other.

The poſterior Branch, runs more or leſs tranſverſly backward, and furniſhes the *Glutæi*, *Vaſtus Externus*, and Beginning of the Biceps.

A little below theſe two Branches, about the upper Extremity of the *Vaſtus Internus*, the Crural Vein produces a Branch, which runs down on the Side of the Trunk, covering the Crural Artery, almoſt as low as the Ham, where it is again united to the Trunk by an Anaſtomoſis; and ſometimes it is continued ſeparate a little Way down on the Leg. It has the Name of *Vena Sciatica*, from the Sciatic Nerve which it accompanies.

On the Outſide of this Anaſtomoſis, the Crural Vein gives off a Branch, which runs backward between the Biceps and neighbouring Muſcles, and ſo downward on the back Side of the Leg a little exteriorly, and very near the Skin, all the Way to the outer Ancle. This Vein is termed *Saphena minor*, or *externa*.

Saphena minor.

The little *Saphena*, having got near the Integuments in its Courſe downward, gives out a Branch, which runs backward, and communicates with the great *Saphena* about the Middle of the back Side of the Thigh.

Immediately above and below the Ham, this Vein ſends out other Branches, which, alſo, communicate with the *Saphena major*; and, having run down about one third Part of the back Side of the Tibia, it ſends off another Branch, which is afterwards reunited to the Trunk.

About the Beginning of the *Tendo Achillis*, the little *Saphena* runs outward in the Integuments, toward the outer Ancles, where it terminates in cutaneous Ramifications ſent to every Side.

Vena Poplitea.

The Crural Vein having detached the little *Saphena*, runs down between the *Biceps* and the other Flexors of the Leg, cloſely accompanied by the Crural Artery, between which and the inner Condyle of the *Os Femoris* it is ſituated.

A little above the Ham, it takes the Name of *Vena Poplitea*, and, as it runs down betwixt the two Condyles, it gives Branches to the Flexor Muſcles above-mentioned, to the lower and poſterior Parts of both *Vaſti*, and to the Fat which lies above the Interſtice of the two Condyles.

It, alſo, gives off ſeveral other Branches, one of which runs up laterally between the outer Condyle and the Biceps, and then turning forward, is ramified in the ſame manner with the Artery. Another Branch goes backward, ſending Ramifications to the Beginning of the *Gaſtrocnemii*; after which, it runs down on the back Side of theſe Muſcles, to the *Tendo Achillis*.

Near the internal Condyle, the *Poplitea* ſends ſome lateral Branches to the Extremities of the neighbouring Muſcles, eſpecially thoſe of the *Semi-nervoſus*, and *Semi-membranoſus*. Laſtly, it ſends a Branch toward the external Condyle, which having run for a ſmall Space on the *Peronæus Longus*, goes back again into the Trunk.

The *Vena Poplitea* runs down immediately behind the Muſcle of the ſame Name, at the lower Part of which it ſends off ſeveral Ramifications to each Side, which divide and unite again in different Ways and Degrees, and afterwards it loſes its Name; being divided into three conſiderable Branches, called *Tibialis anterior*, *Tibialis poſterior*, and *Peronæa*, of which the *Tibialis poſterior* is moſt frequently a Continuation of the Trunk, and the other two like Branches.

Vena Tibialis anterior.

The anterior Tibial Vein, having diſtributed ſome ſmall Branches from its very Beginning, to the Muſcles behind, the Heads of the two Bones of the Leg, perforates the interoſſeous Ligament from behind, forward, and runs between the ſuperior Portions of the *Muſculus Tibialis Anticus*, and *Extenſor Digitorum communis*.

As ſoon as it pierces the interoſſeous Ligament, it diſtributes ſmall ſuperficial Branches to the Head of the Tibia and Fibula, which run to the Joint of the Knee, and communicate with the lateral Branches of the *Vena Poplitea*.

Afterwards it divides into two or three Branches, which run down together on the fore Side of the interoſſeous Ligament in Company with the anterior Tibial Artery, which they ſurround at different Diſtances, by ſmall communicating Circles.

Theſe Branches, having reached the lower Extremity of the Leg, unite in one, which afterwards divides into ſeveral, the Ramifications of which are diſtributed to the Foot.

A particular Branch goes out from the reunited Portion, which at the lower Part of the Leg, perforates the interoſſeous Ligament from before backward, and communicates with the *Vena Tibialis poſterior*.

Vena Tibialis posterior.

The poſterior Tibial Vein gives off, from its Beginning, a Branch toward the Inſide, which is diſtributed to the *Gaſtrocnemii* and *Soleus*. This Vein is named *Suralis*.

Afterward the poſterior *Tibialis* runs down between the *Soleus* and *Tibialis poſticus*, giving Branches to each of them. It is divided in the ſame manner as the *Tibialis anterior*, into two or three Branches, which as they run, ſurround the correſponding Artery, by ſmall communicating Circles formed at different Diſtances.

It continues this Courſe in Company with the Artery as low as the outer Ancle, furniſhing the *Muſculus Tibialis poſticus*, and the long Flexors of the Toes. At the lower Part of the Leg, it communicates with a tranſverſe Branch of the *Saphena*, and with the anterior Tibial Vein, in the manner already ſaid.

Laſtly, it paſſes on the Inſide of the Os Calcis, under the Sole of the Foot, where it forms the *Venæ Plantares*, by dividing into ſeveral tranſverſe Arches, which communicate with each other, and with the *Saphena*, and ſend Ramifications to the Toes, nearly in the ſame manner as the *Arteria Plantaris*.

Vena Peronæa.

The *Vena Peroæa* is, alſo, double, and ſometimes triple. It runs down on the Inſide of the Fibula, almoſt in the ſame Direction with the *Arteria Peronæa*, which it, alſo, ſurrounds at different Diſtances, by communicating Branches, after the manner of the *Tibialis poſterior*.

It runs down as low as the outer Ancle, communicating ſeveral times with the *Tibialis poſterior*, and ſending Ramifications to the neighbouring Portions of the *Muſculi Peronæi*, and long Flexors of the Toes.

The laſt of theſe Communications makes the *Venæ Plantares* in ſome Subjects, to appear rather to come from this Vein, than from the *Tibialis poſterior*, from which they commonly riſe.

Vena Portæ.

The *Vena Portæ* is a large Vein; the Trunk, which is ſituated principally between the Eminences on the lower or concave Side of the Liver, called *Portæ* by Anatomiſts; and from thence this Vein has got the general Name of *Vena Portæ*, or *Vena Portarum*.

It may be conſidered as made up of two large Veins, joined almoſt endwiſe by their Trunks; from each of which, the Branches and Ramifications go out in contrary or oppoſite Directions. One of theſe Trunks adheres to the Liver, and is ramified in that Viſcus, its Branches accompanying the whole Diſtribution of the Hepatic Artery.

The other Trunk is without the Liver, and ſends its Branches to the Viſcera, ſupplied by the reſt of the *Arteria Cœliaca*, and by the two *Meſentericæ*, that is, to the Stomach, Inteſtines, Pancreas, Spleen, Meſentery, and Omentum.

The firſt Portion of this Vein may be termed *Vena Portæ Hepatica*, *ſuperior*, or *minor*, the Trunk of which is commonly known by the Name of *Sinus Venæ Portarum*. The other Portion may be called *Vena Portæ Ventralis*, *inferior*, or *major*; and this is what I am now to deſcribe.

The large Trunk of the *Vena Portæ Inferior*, or *Ventralis*, is ſituated under the lower or concave Side of the Liver, and joined by an Anaſtomoſis to the Sinus of the *Vena Portæ Hepatica*, between the Middle and Right Extremity of that Sinus, and conſequently at a good Diſtance from the Left Extremity. From thence it runs down a little obliquely from Right to Left, behind or under the Trunk of the *Arteria Hepatica*, bending behind the Beginning of the *Duodenum*, and under the Head of the Pancreas, its Length being about five Fingers Breadth.

Having reached to the Head of the *Pancreas*, this Trunk loſes the general Name of *Vena Portæ*, and terminates in three large principal Branches, which are diſtributed by numerous Ramifications to the Viſcera already named. The firſt Branch is termed *Vena Meſaraica*, or *Meſaraica major*; the ſecond, *Splenica*; and the third, *Hæmorrhoidalis interna*, or *Meſaraica minor*.

The *Vena Meſaraica major* appears to be a Continuation of the Trunk of the *Vena Portæ inferior*. The *Splenica* is a capital Branch of that Trunk; and the *Hæmorrhoidalis Interna* has ſometimes a common Origin with the *Splenica*, and ſometimes is no more than a Branch of that Vein. In ſome Subjects the *Meſaraica major*, and *Splenica*, appear to ariſe by an equal Biſurcation of the Trunk of the inferior *Vena Portæ*, and in others, the *Hæmorrhoidalis* ariſes from the very Angle of that Biſurcation.

The inferior *Vena Portæ*, before the Formation of theſe three Branches, ſends off from the Trunk ſeveral ſmall Ramifications, which are commonly the *Venæ Cyſticæ*, *Hepatica minor*, *Pylorica*, *Duodenalis*, and ſometimes the *Gaſtrica recta*, and *Coronaria Ventriculi*.

All theſe ſmall Veins ſometimes ariſe ſeparately; and in other Subjects, ſome of them go out by ſmall common Trunks. It ſometimes happens, that ſeveral of them do not come immediately from the Trunk of the *Vena Portæ*, but from one of its great Branches.

The Cyſtic Veins run along the *Veſicula Fellis* from its Neck to the Bottom; and as they are often no more than two in Number, they are called *Cyſticæ Gemellæ*, a Name given, alſo, to the Arteries which accompany them. They go out from the Right Side of the great Trunk near its Beginning, ſometimes ſeparately, ſometimes by a ſmall and very ſhort common Trunk.

The ſmall Hepatic Vein is commonly a Branch of one of the Cyſticæ, or of their common Trunk.

The *Vena Pylorica* ariſes from the great Trunk, almoſt oppoſite to the Origin of the *Cyſticæ*, and ſometimes is only a Branch of the Right *Gaſtrica*. It paſſes over the *Pylorus* to the ſhort Arch of the Stomach, where it is joined by Anaſtomoſis with the *Coronaria Ventriculi*.

The Duodenal Vein, commonly called *Vena Inteſtinalis*, goes out from the great Trunk near the *Cyſticæ*, and ſometimes from the ſmall common Trunk of theſe Veins. It is diſtributed principally to the *Inteſtinum Duodenum*, and ſends, alſo, ſome Ramifications to the *Pancreas*. There is another Vein called, alſo, *Duodenalis*, which is a Branch of the *Gaſtrica* of the ſame Side.

The *Vena Gaſtrica*, or *Gaſtro-epiploica Dextra*, and the *Coronaria Ventriculi*, come more ſeldom from the Trunk of the *Vena Portæ*, than from its great Branches, with which I therefore chooſe to deſcribe them.

Vena Meſaraica major.

The inferior *Vena Portæ*, having given off the *Splenica*, changes its Name to that of *Meſaraica*, or *Meſaraica major*, which often appears to be rather a Continuation of the Trunk, than one of the great Branches.

It bends towards the ſuperior Meſenteric Artery, ſending off two Veins; and, afterwards running up over that Artery, it accompanies it in thoſe Portions of the Meſentery and Meſocolon, which belong to the ſmall Inteſtines, the *Cæcum*, and Right Portion of the Colon. As it runs down, it forms an oblique Arch, almoſt like that of the Artery, which is, alſo, ramified on both the convex and concave Sides, but not ſo regularly.

The firſt particular Branch from this Trunk is called by *Riolanus*, *Vena Colica*. it goes out from the anterior Part of the Trunk, before it joins the Artery, and runs directly to the Middle of the Colon, where it divides to the Right and Left, and forms Arches. On the Left-hand it communicates with the ſuperior or aſcending Branch of the *Hæmorrhoidalis*; and, on the Right, with the ſecond Branch of the *Meſaraica*.

This ſecond Branch is a little under the firſt, or *Colica anterior*, and ſomething more toward the Right-hand. It may be named *Gaſtro-colica*, and is ſoon divided into two Branches, one ſuperior, the other inferior.

The ſuperior Branch of the *Vena Gaſtro-colica*, ſends ſmall Veins to the Head of the Pancreas, and forms the *Vena Gaſtrica*, or *Gaſtro-epiploica dextra*, which goes from the *Pylorus* to the great Curvature of the Stomach, and communicates with the *Gaſtrica Siniſtra*. In its Paſſage it ſupplies the Stomach and Omentum, and communicates with the *Pylorica*, *Coronaria Ventriculi*, &c. and ſometimes it forms the *Pylorica*.

The inferior Branch of the *Vena Gaſtro-colica*, which may be called *Colica dextra*, goes to the Right Portion of the Colon; and from thence to the upper Part of that Inteſtine, where it is divided archwiſe, and communicates with the Right Branch of the *Colica anterior*, and with a Branch of the *Vena Cæcalis*, as we ſhall ſee hereafter.

The Trunk of the great Meſaraic Vein ſends out ſometimes, oppoſite to the *Gaſtrica*, a particular Branch to the Omentum, called *Epiploica dextra*. But almoſt immediately before it aſcends over the Meſenteric Artery, it produces two large Branches very near each other, which paſs behind and under the Artery, being diſtributed to the *Jejunum*, and Part of the *Ileum*, by numerous Ramifications, which form Arches and Areolæ like thoſe of the Artery.

Afterwards the Trunk of the *Meſaraica* paſſes over the ſuperior Meſenteric Artery, to which it adheres very cloſely, and from the convex Side of its Arch ſends out ſeveral Branches almoſt in the ſame manner with the Artery; but with this Difference, that oftentimes the Branches do not ariſe immediately from the Vein in ſo great Numbers; and each of them ſends out many more Ramifications.

From the concave Side of the Meſaraic Vein, a little below the Origin of the ſecond Branch from the convex Side, ariſes a Branch called by *Riolanus*, *Vena Cæcalis*, which runs to the Beginning of the Colon, croſſing one of the Branches of the ſuperior Meſenteric Artery.

This Cæcal Vein divides by two Arches, the uppermoſt of which communicates with the lower Branch of the *Vena Gaſtro-colica*; the other, after having ſent Ramifications to the *Inteſtinum Cæcum*, and *Appendicula Vermiformis*, communicates below, with the Extremity of the great Meſaraic Vein.

Vena Splenica.

The Splenic Vein is one of the three great Branches of the *Vena Portæ*, and may be ſaid, in ſome meaſure, to be a ſubordinate Trunk of that Vein. It runs tranſverſly from the Right to the Left, firſt under the Duodenum, and then along the lower Side of the Pancreas, near the poſterior Edge.

In this Courſe it gives off ſeveral Veins, *viz.* the *Vena Coronaria*, *Ventriculi*, *Pancreaticæ*, *Gaſtrica*, or *Gaſtro-epiploica Siniſtra*, and *Epiploica Siniſtra*. It, alſo, often gives Origin to the *Hæmorrhoidalis Interna*, the third capital Branch of the *Vena Portæ*.

It terminates afterwards by a winding Courſe, being divided into ſeveral Branches that go to the Spleen; one of which produces the ſmall Veins, called by the Antients *Vaſa Brevia*.

The *Coronaria Ventriculi*, ſo called, becauſe it ſurrounds, more or leſs, the upper Orifice of the Stomach, runs along the ſmall Arch of that Viſcus toward the *Pylorus*, where it joins and becomes continuous with the *Vena Pylorica*. In its Paſſage it gives ſeveral Ramifications to the Sides of the Stomach, which there form numerous Areolæ, and communicate with the Veins of the great Arch.

It ariſes pretty often from the Beginning of the *Splenica*, and ſometimes from the Left Side of the Extremity of the great Trunk of the *Vena Portæ*, behind the Hepatic Artery; and, in that caſe, it is the moſt conſiderable of all the ſmall Veins that go out from the great Trunk.

The *Venæ Pancreaticæ* are ſeveral ſmall Branches ſent by the *Splenica* to the Pancreas, along its lower Side. There are other ſmall Pancreatic Veins, which do not ariſe from the *Splenica*, as has been ſaid in the Deſcription of the *Gaſtro-colica*, one of the Branches of the great Meſaraic Trunk.

The Left Gaſtric, or Gaſtro-epiploic Vein, goes out from the *Splenica* at the Left Extremity of the *Pancreas*; from whence it runs to the great Extremity of the Stomach, and along the great Arch, till it meets the *Gaſtrica dextra*, which is continuous with the *Siniſtra*.

In its Paſſage, it gives ſeveral Branches to both Sides of the Stomach, which are diſtributed by numerous Ramifications, form many Areolæ; and communicate with the Branches of the *Coronaria Ventriculi*.

At a ſmall Diſtance from its Origin, this Gaſtric Vein ſends out a Branch, which is diſtributed to the Omentum; and on this Account it has been called *Gaſtro-epiploica*. This Branch ſeems to communicate with the *Hæmorrhoidalis interna*.

The *Vena Epiploica Siniſtra* ariſes at the ſmall Extremity of the Pancreas, and is ramified on the Omentum all the Way to the Colon, where it communicates with the *Hæmorrhoidalis interna*. When this Vein is wanting, the Branch of the Left *Gaſtrica* ſupplies its Place. It ſometimes comes from the moſt anterior Branch, which the *Splenica* ſends to the Spleen.

Laſtly,

Laſtly, The *Vena Splenica* reaches the Fiſſure of the Spleen, which it enters, through its whole Length, by ſeveral Branches, almoſt in the ſame manner as the ſplenic Artery. It is from the moſt poſterior of theſe Branches that the Veins are ſent off to the great Extremity of the Stomach, formerly known by the Name of *Vaſa Brevia*, which communicate with the *Coronaria Ventriculi* and *Gaſtrica Siniſtra*.

VENA HÆMORRHOIDALIS INTERNA, SIVE MESARAICA MINOR.

The internal hæmorrhoidal Vein is one of the three great Branches of the *Vena Portæ*, coming ordinarily from the Beginning of the *Vena Splenica*, and ſometimes from the Extremity or Angle of the Bifurcation of the great Trunk of the *Vena Portæ*.

At a ſmall Diſtance from its Beginning, it gives to the *Duodenum* a ſecond *Vena Duodenalis*, which is ſometimes more conſiderable than the firſt, or that which comes from the great Trunk of the *Vena Portæ*.

Afterwards it is divided into two Branches, one ſuperior, or aſcending; the other *inferior, or deſcending: The firſt runs to* the upper Part of the Arch of the Colon, where, after many Ramifications, it communicates with a Branch of the great *Meſaraica*, with the Ramifications of the *Gaſtro-epiploica ſiniſtra*, and with thoſe of the neighbouring *Epiploica*.

The inferior Branch runs down on the left Portion of the Colon, on the lower Incurvations of that Inteſtine, and on the *Rectum*, all the way to the *Anus*. In this Courſe it ſupplies the Meſocolon, and forms Arches, which ſend out numerous ſmall Ramifications, which ſurround theſe Inteſtines: It ſeems, alſo, to communicate, by ſome capillary Twigs, with the left ſpermatic Vein.

This Vein has been named *Hæmorrhoidalis*, from the Tumors often found at its Extremity next the *Anus*, which are called *Hæmorrhoides*. The Word *Interna* is added to diſtinguiſh this Vein, from the *Hæmorrhoidalis externa*, which comes from the *Vena Hypogaſtrica*, and with which this Vein communicates by capillary Ramifications. The Name of *Meſaraica minor* agrees to it very well, becauſe of its Situation, with reſpect to the inferior meſenteric Artery, which is, alſo, leſs than the ſuperior. *Winſlow*.

VENA MEDINENSIS. See DRACUNCULI.

VENÆ SECTIO. See PHLEBOTOMIA.

VENATIO. Hunting. This, conſidered as an Exerciſe, is, perhaps, the beſt that can poſſibly be contrived, for ſtrengthening the general Habit, and procuring Health and Vigor. The Seaſon of the Year, the Time of the Day deſtined for this Amuſement, and the Motion neceſſary on this Occaſion, are all admirably adapted to the Reſtoration and long Continuance of Health: It is, beſides, of no ſmall Importance, to have the Mind recreated, at the time the Body is exerciſed; for this admirably aſſiſts the due Circulation of the Fluids through the minute Canals deſtined for their Conveyance: And, I believe, there are few People not utterly abandoned to Idleneſs and Debauchery, of ſome Kind or other, who do not perceive a ſpontaneous Flow of Spirits, when they ride on Horſeback at or about the riſing of the Sun, when they reſpire the pureſt Air, when Variety of perpetually changing Scenes preſent themſelves, and when the Mind is agreeably agitated concerning the Event of the Chace.

——— *Vocat ingenti Clamore Cithæron,*
Taygetique Canes, Domitrixque Epidaurus Equorum,
Et Vox Aſſenſu Nemorum ingeminata remugit. Virgil.

I am ſenſible, that, by ſaying thus much in favour of Hunting, I may, poſſibly, expoſe myſelf to the Ridicule of thoſe who eſteem it meritorious to laugh at every thing laudable and manly. But I preſume I may, without Offence, remind theſe, that it is more prudent to make uſe of the moſt delightful Means of preſerving entire, the vital, animal, and, in conſequence of this, even the intellectual Faculties, than to undermine the Pillars of Health, by Indolence, Taverns, Brothels, and Phyſic.

VENEN *Sinenſium*. Martin. Atl. Sinenſ. *Luſitanis* Jambos.

This is a thorny Tree, bigger than the Lemon-tree, and which bears white Flowers, of a very pleaſant Smell. The Fruit is as big as a Man's Head, with a Rind like that of a Quince, and a reddiſh Pulp, which has the Taſte of Grapes before they are quite ripe. This Fruit, hung up in a Houſe, or under Covert, will keep good for a Year.

The Tree grows in the Province of *Fokien* in *China*. They extract a very fragrant Water from the Flowers, and from the expreſſed Juice of the Fruit they prepare a Liquor which ſerves them for Drink. *Raii Hiſt. Plant.*

VENENUM. Poiſon.

Quick *Poiſons*, when, by Ingeſtion, or Application, they become the Cauſes of Diſeaſes, either through their own proper Force, or by firſt inducing a Corruption of the infected Parts, indicate, 1. A Removal of the *poiſonous Cauſe*. 2. A Correction of the *Poiſon* already received, or unavoidably to be received. Or, 3. An Expulſion of it from the Body. 4. A Mitigation of the Symptoms. And, 5. A fortifying of the Body againſt the Force of any future Ingeſtion, or Application of the *Poiſon*.

The Cauſe which propagates the *Poiſon*, and communicates it to the Body, or which mixes its *Miaſmata* (contagious Taint) with the Atmoſphere, or conveys them, when applied to the Body, within the ſame, if ſenſible, and known, is eaſily removed,

1. By taking out of the way the poiſonous Matter, either, (α) Firſt, by Combuſtion, in kindling large and clear Fires; or (β) by correcting the Air, the Vehicle of thoſe *Miaſmata*, which is generally beſt effected by the thick Vapours that proceed from the kindling or heating of ſuch Things as have a Virtue oppoſite to the known *Poiſon*. Thus, for Inſtance, in the Peſtilence, againſt the cauſtic, alcaline, and putrid Exhalations, proper Remedies are, Fumes of Vinegar, Spirit of Salt, and Gunpowder; againſt *poiſonous* acid Exhalations, the diſperſed Odours of oleous alcaline Spirits are a good Preſervative. Another way (γ) is, by altering, diſſipating, renewing the Air by a Wind procured by Art, eſpecially if ſuch Wind could, at the ſame time, by the Method of *Hippocrates*, be tranſmitted through great Fires, kindled up for the Purpoſe. The laſt Means (δ), to be mentioned under this Head, is, by flying the Contagion, or removing our Habitation to the other Side of ſome high Mountain.

2. The Cauſe is removed by expelling or correcting the *poiſonous* Matter, which, either by Ingeſtion, or Application, inſeſts the Body.

The *Poiſon* itſelf, when known to be preſent, is corrected by the Application of ſuch Things as render unactive thoſe Qualities by which it injures the Body.

Theſe Qualities, (1.) in many *Poiſons*, are ſcarce hitherto known, but only by their deleterious Faculty, which hardly diſcovers itſelf but by the Death of the infected Subject. The ſame noxious Qualities, (2.) in other *Poiſons*, manifeſt themſelves by their ſurpriſing, and hardly explicable Effects; (3.) in ſome *Poiſons* by Effects which occur in other known Diſeaſes; and (4.) in ſome others theſe Qualities are underſtood *a priori*, as they call it, being very eaſily foreſeen from a Knowledge of the Nature of the *Poiſon*.

The firſt Sort of theſe *Poiſons* juſt mentioned, and which are ſaid to be *hurtful to the whole Subſtance*, indicate ſuch Remedies as are exactly oppoſite to them, and as little underſtood, with regard to the Reaſon of their Effects, as the *Poiſons* themſelves: Theſe Remedies go by the Names of *Antidota*, *Antidotoi*, *Alexicaca*, *Alexipharmaca*, and *Theriaca*; and being known only by Experience, are to be learnt from the Accounts of *Poiſons*.

The ſecond Kind of *Poiſons*, which are ſaid to be pernicious from an occult Quality, require Remedies, equally unaccountable, called *Specifics*, ſcarce to be found, unleſs by mere Chance: The beſt Account we have of theſe Medicines, alſo, is to be met with in the Hiſtory of particular *Poiſons*.

The third Sort of *Poiſons*, which, before they kill, produce ſuch morbous Effects as corrupt the Fabric of the Body after the manner of ſome known Diſeaſes, require ſuch Remedies as are obſerved to be effectual for the Cure of ſuch Diſeaſes as diſtinguiſh themſelves by the like Effects.

Poiſons of the fourth Kind, which are known as applied, or to be applied to the Body, neceſſarily require ſuch Medicines as are of preſent and ready Efficacy in ſubduing the known Malignity: Thoſe Medicines, for the moſt part, owe their Virtue to an oppoſite Malignity, which would render them quite pernicious to the Body, if it were not for the *Poiſon* before received.

Hence we ſee, that the Nature and Properties of *Poiſons* are learnt from natural and medicinal Hiſtory, in Conjunction with the Knowledge of Mechanics and Chymiſtry, not omitting Anatomy, which repreſents to our View the Effects of *Poiſons*. From the Knowledge acquir'd by theſe Studies, are we furniſh'd with Indications, in ſuch Caſes.

From theſe Indications, thus ſupplied, we come to know the Matter, Preparation, Doſe, Application, and Management, of the Corrective.

Primary, and almoſt general, or univerſal Antidotes, againſt all Sorts of *Poiſons*, and, for that Reaſon, highly uſeful, where it is known that *Poiſon* is given, but not what particular *Poiſon*, are, principally, pure Water, a very little hotter than our Blood in its healthy State, plentifully, ſpeedily, and for a good while together, received by the Mouth, injected in Clyſters, and properly applied; a mild Lixivium, compoſed of common Water, and *Venice* Soap, uſed in the ſame Manner, Quantity, and Time, with the Water before-mentioned; or pure Water, rendered ſaponaceous with Oxymel, and uſed as before; mild, recent Oils,

expreſſed from ſmooth, fat, and farinaceous Seeds, ſpeedily, copiouſly, for a long time together, ſwallowed, injected, applied; or the Oils of freſh-kill'd Animals, boil'd with all the Speed poſſible, in Plenty of Water, and uſed in like manner; Vinegar, alſo, which is of general Uſe in many ſudden Caſes; and, in the laſt Place, Opium. As for an univerſal Prophylactic, or Preſervative, againſt all Sorts of *Poiſons*, none has been hitherto diſcovered; and it is even inconſiſtent with the Nature of Things.

In exhibiting a ſpecial, or ſingular Antidote, the higheſt Prudence is requir'd: For ſince every particular Antidote is endow'd with a peculiar Virtue of correcting this or that *Poiſon* only, they have, for the moſt part, as much Violence, or rather more, than the Thing they are to ſubdue: When theſe two Things, therefore, the *Poiſon* and the Antidote, enter into Conflict within the Body, they deſtroy one another, and, being render'd unactive, cannot do much Miſchief; but if Antidotes are found alone, or in a ſeparate State from the Matter on which they are to act, they often prove equally noxious with the *Poiſons* againſt which they are exhibited.

All theſe Antidotes, whether univerſal or ſingular, may and ought to be prepared, applied, and directed, in ſuch a manner, that they may be enabled, ſpeedily, conſtantly, and without Diminution of Strength, to make their way to the Places where the *Poiſon* is lodged, and there ſubdue it. The Phyſician, therefore, ought, on all Occaſions, to have ready preſent to his Mind a general Liſt, comprehending all the Diverſities of Applications, of which the primary are, Suffumigations of the Air, dry or moiſt Vapours for the Lungs, Potions, Clyſters, Epithems, Baths, Fomentations, Injections for the Uterus, Bladder, Fauces, and other Parts.

Poiſon received is expelled out of the Body, 1. By diminiſhing the Reſiſtance at the Place by which it may, with moſt Safety, be diſcharged, where it does leaſt Miſchief, where it is nearеſt to an Outlet, where it is leaſt hurtful to the vital *Viſcera*; for then it will, either by the vital Forces, or the Strength of the Medicines, be propelled to the Place required, and thence be diſcharged. This, in former Times, was effected by what was then eſteemed very ſtrange, and unaccountable; but is now, through the Induſtry of M. *Redi*, eaſily underſtood, the Suction of the *Marſi* and *Pſylli* (two Nations famous for extracting *Poiſons* by Suction with the Mouth); but is now performed by means of large and ſtrong Cupping-glaſſes, applied with much Flame, and often renewed; by warm, and highly-emollient Fomentations; by Leeches, Scarifications, Frictions, Heatings, Plaiſters. 2. By magnetic Attraction, in which a certain Subſtance attracts *Poiſon* by a ſingular Virtue, and relieves the Patient; as we find it recorded of the Fleſh of the venomous Beaſt, the Stone of the Ceraſtes, and of other Serpents, and the like. 3. By ſuch Medicines as are very potent Diluents and Movers: Of this Nature are quick Emetics, and Cathartics, very ſtrong Sudorifics, and, perhaps, diuretic Diluents. Hence, Diaſcordium, Mithridate, Theriaca, Orvietan, and Opiates, are of Service, though not entirely to be depended on, either as univerſal Therapeutics, or Prophylactics. 4. By a Separation of the affected Part, with as much Speed as poſſible, to prevent the Spreading of the Infection; and this is beſt effected by a Cautery of a hot Iron.

Thoſe ſevere Symptoms, which are the ſenſible Effects of *Poiſons*, are, according to the Doctrine of Pathology, eaſily enough reduced under proper Claſſes, and, in that Caſe, may be cured, as if they were each of them ſome ſingle Diſeaſe.

The Body is fortified againſt the Application of *Poiſons*, 1. By a free Uſe of Antidotes univerſal and ſingular, which may ſometimes be ſafe, when the Nature of the *Poiſon*, againſt which they are given as Preſervatives, is foreknown. 2. By anointing the Part of the Body which is expoſed, with oleous Lenitives. 3. By preſerving all the Parts of the Body in equable Perſpiration. But, as yet, we are acquainted with no univerſal Prophylactic, as we obſerved before, tho' there are ſeveral extolled as ſuch.

What has been ſpoken, hitherto, of *Poiſons*, is applicable, alſo, to the Peſtilence, and other contagious Diſorders; and may, probably, be beſt underſtood from the following, perhaps, not ill-compoſed Synopſis of *Poiſons* and Antidotes.

Firſt, then, ſome *Poiſons* are manifeſtly to be reduced under Acrids, but ſuch as have a peculiar Acrimony, which is phlogiſtic, cauſtic, effective of a Gangrene, and ſeptic: The chief of theſe are, Cobalt, yellow and red Arſenic, white Arſenic Sublimate, Realgar, *Lapis Armenus*, *Lapis Lazuli*: Theſe, by Application, either internal or external, inflame, corrode, excite Pains, burning Heats, Dryneſſes, firſt, in the Parts firſt injur'd; and, ſoon after, in the whole Body. Hence, they create very acute inflammatory Diſorders in the Mouth, Fauces, Oeſophagus, Stomach, and Inteſtines; excite Nauſea, Vomiting, Dyſentery, Cholera Morbus, and the Ileos; and produce a Paleneſs, and Lividneſs; whence proceed Vertigos, Convulſions, and Death; or, if this be eſcaped, a Wanneſs of Colour, Palſies, and Contractions. Remedies, here indicated, are, warm, acidiſh, honey'd Water, moſt ſpeedily, copiouſly, and for a long time uſed, in Potions, Clyſters, and Baths. If the *Poiſon* can be expelled by Stool and Vomiting, it is ſo much the better, and the Remedy is to be the oftener repeated. Fat Broths, Milk, Oil, oleous Subſtances, Butter, are of Service here; and, after that, we muſt, for a long time, employ relaxing, ſoft, fat, acidulated Subſtances, both by Ingeſtion, and in Baths.

Among Vegetables of this Quality, the principal are, *Aconitum*, *Anacardium*, *Anemone*, *Apium Riſus*, (the Herb which excites the *Riſus Sardonicus*) *Apocynum*, *Arum*, *Azedarach*, *Cataputia*, *Chamælæa tricoccos*, *Chamæleon niger*, *Clematitis*, *Colchicum*, *Corona Imperialis*, *Cyclamen*, *Dracontium*, *Elaterium*, *Eſula*, *Euphorbium*, *Flos Africanus*, *Grana Nubiæ*, *Helleborus albus*, *niger*, *viridis*, *Hermodactyli*, *Hyacinthi*, *Laureola*, *Mezeræum*, *Mel venenatum*, *Napellus*, *Nigella Sylveſtris*, *Oleander*, *Ranunculi*, *Ricinus*, *Scammonium*, oleous Seeds by long Corruption become acrimoniouſly rancid, *Tithymali*, *Thapſia*: The Effects of theſe Simples are like thoſe of the Subſtances before-mentioned, and the Indications are exactly the ſame.

There are, 2. Other violent and acrimonious *Poiſons*, but which are, at the ſame time, of a ſort of viſcid Quality, by which they ſtick in the Stomach, and thence affect the Brain and Nerves after a ſingular manner. Of this Kind are, the *Chryſomela*, the *Cicuta major*, the *Cicuta minor Petroſelino ſimilis*, the *Cicuta aquatica Geſneri*, *Crocus*, *Datura*, *Hyoſcyamus*, *Nux Vomica*, *Oenanthe Apii Folio Succo viroſo*, *Opium*, *Solanum*, *Melanoceraſos*. The Effects of theſe are, Vertigo, *Scotomia*, *Delirium*, Madneſs, Nauſea, Vomiting, Dyſentery, terrible Convulſions, Apoplexy, and Death. The Indications here are, the moſt ſpeedy Exhibition of a very quick Emetic, an immediate Ingeſtion of vaſt Quantities of aqueous, oleous, honey'd, acidulated Liquors, by Potion, Clyſters, Baths, and continually repeated. The Diſorder being mitigated, and repreſſed, Sweating is ſtrongly to be provoked by theriacal Medicines, and the ſame is to be frequently repeated; and this muſt be followed by a ſoft and thin Diet.

In the third Place (3.) There are acrid Poiſons, which have a manifeſt Acidity; for Inſtance, (α) Spirit of Salt, Spirit of Nitre, Aqua-regia, Aqua-fortis, Spirit of Sulphur, Spirit of Vitriol. (β) The ſame Acids, united with metallic Bodies, and by that means extremely powerful, as are, for Example, a Solution of Gold, and of its Cryſtal; a Solution of Silver, its Vitriol, and Lapis Infernalis; a Solution of Copper, and the Salt thence proceeding; a Solution of Quickſilver in Spirit of Nitre, in Spirit of Salt, in Aqua-fortis, in Aqua-regia, or its Calcination with Oil of Vitriol, red, white, green Precipitate, corroſive and ſweet Sublimate, Calx, Turpeth; an Impregnation of Antimony with Aqua-regia, and the eſcharotic Calx hence produced: Theſe Kinds of Poiſons produce abominable Taſtes in the Mouth, acid Fetors, Inflammations, gangrenous Eſchars, Nauſea, Vomiting, Dyſentery, Cholera Morbus, moſt ſevere Gripes, Cardialgia, Ileos, Colic, Tumors of the Glands, a cadaverous Smell, Salivation, Syncope, and Death. In theſe Caſes are required Dilutions by aqueous Liquors; Obtundents, as Oils; Alteratives, as ſaponaceous or highly alcaline Lixivia; the ſtrongeſt Abſorbents of Acids; and, laſtly, when the Violence of the Diſorder is abated, the frequent Uſe of Oil, fat Broth, and the like Emulſions.

Fourthly, (4.) There are Poiſons manifeſtly acrid, which are known to be alcaline: Such are the Aſhes of burnt Vegetables; the Alcali thence produced; the ſame render'd igneous with the Calx of burnt Stone; Eggs, Humours, Fleſh quite putrefy'd; the Salts thence ſeparated; the ſame render'd igneous by Sublimation with a fixed Alcali, Lime, Lapis Calaminaris, Chalk, Iron, and the like. The Symptoms proceeding from thoſe Poiſons, are, a very quick, violent, and igneous Inflammation, Eroſion, Gangrene, very burning Pains in all Parts, unquenchable Thirſt, Convulſions, very high Fevers, a cadaverous Smell, an intimate Diſſolution of the Humours, a Putrefaction of the ſame, and of the Viſcera, and, laſtly, Death. The Cure is effected by aqueous relaxing Diluents, oleous Obtundents, pinguious and earthy Subſtances, by Inverſion, or Alteration, by means of diluted, volatile, and eaſily moveable Acids. After theſe the Diet muſt for a long time conſiſt of acidulous, oleous, and emollient Foods.

Some Poiſons there are, (5.) Which are frequently mortal, by their ſingular Acrimony; yet ſo as that this Acrimony ſhall ſcarce manifeſt itſelf otherwiſe than by its deleterious Effects on the human Body: Such are Copper, burnt Calx of Copper, Calx of Copper by Corroſives, Flos *Æris*, Squama *Æris*, Crocus of Antimony, Calx of the ſame prepared by burning, and the Glaſs made of it; the pure Flower of Antimony, prepared by Fire alone, or by the Help of Sal Ammoniac,

and then washed. By these Kinds of Poisons are excited a Nausea, Vomiting, Dysentery, Cholera Morbus, excessive Purgation, severe Pains in the Viscera, Spasms, Tetanus, Syncope, dreadful Anxiety, and Death. The Cure is performed by an immediate Ingestion of Diluents, Emollients, Obtundents, Acids, and honied Substances, above, and below, and the same externally applied; and the Use of them continued in this manner for a long time together: After these, Opiates and oleous Substances are of Service.

Among acrid Poisons may be reckoned (6.) Those which are merely mechanical, as the Diamond, Mountain Crystal, Filings of Iron, Filings of Brass, feathered Alum, pounded Glass, and the like. These prick the Nerves, and wound the Vessels, and, by so doing, excite Convulsions and Hæmorrhages, whence proceed Ulcers, and the like Mischiefs. In these Cases the Indication is a speedy and copious Use of Oil and Butter.

In the seventh Place (7.) There are Poisons which kill in a quick or slow manner, by Constriction, Incrustation, Obstruction, or Exsiccation: Of this Nature are, perhaps, Quick-lime, and Lime slak'd; also, Gypsum, Lead in the Ore, the Filings, Scales, Calx, Glass, of the same; White-lead, Red-lead, Litharge, the Ashes of burnt Tin, Earth of Sinope, the Seed of Psyllium, the Sponge of the Cynosbatos, Funguses, Agaric, Misleto: These Substances conglutinate, and cause a Constriction and Strangulation; by which means they excite terrible Disorders, which, after long and miserable Languishing, terminate in Death. Remedies here indicated as necessary, are Emetics, Cathartics, Diluents, spirituous Acids, spirituous oily Alcalis, with all manner of saponaceous Things, to be immediately, and for a long Time, used.

Eighthly, (8.) There are some Poisons of an heteroclite Sort, directly destructive of all the vital Functions, whose Efficacies and Effects have not as yet been well explained; these prove mortal, whether inwardly taken, or outwardly applied, or by a Stroke inflicted. Under this Class are to be reduced Cantharides, the Spider, Tarantula, Asp, Viper, Cerastes, Prestes, Seps, Scorpion, mad Dog, Toad, Bupreſtis, Stellio or Lizard, Salamander, Lepus Marinus, Pastinaca Marina, and the like: The Poisons of these Animals produce various, surprising, and scarce explicable Effects, which end at last in Death. Indications on this Head are, if the Poison be taken inwardly, to evacuate the same immediately by Vomiting; to dilute it, in an extraordinary measure, by aqueous Ingestions; to mollify it, in an high degree, by relaxing, emollient, and oleous Remedies; and to resist the Putrefaction by spirituous and saline Acids. If the Poisons are communicated by external Stroke, Bite, or Application, Extraction of the same is indicated at the Place affected by means of Suction, Scarification, Cauterising, Mollifying, Fomenting; also, Sweat is to be powerfully provoked by penetrating diluent Antidotes, which resist Putrefaction; and the Force of the Venom is to be weaken'd by acid saline Medicines, or by specific Antidotes.

In the last Place (9.) There are Substances which suffocate in a Moment under the Form of an Exhalation. Such are, the confined Vapour of Coals, subterraneous Air long confined, Exhalations of Wine under Fermentation, the volatile Farina of a poisonous Fungus, the Fume of Sulphur, and many others of the like Nature, which are best passed over in Silence. These Poisons appear, from what has been said, to apply themselves to the Lungs or Nerves, and will scarce admit of a Cure.

The more remote Causes of Diseases, which come under the Cognisance of the Senses, are easily altered or removed; for they indicate a Change in the Non-naturals.

But if these Causes are less manifest, yet, as they discover themselves by their sensible Effects, they indicate, by these very Phenomena, proper Remedies.

The Course of those Phenomena carefully observed, directs us to the Use of proper Means, Seasons, Order, Manner, and Way, either for the Correction or Expulsion of the proximate Cause of the Disease in the human Body.

The accurate Observation of the same Phenomena teaches us what is wanting, and what Supplements are necessary.

As, also, what Motions are to be excited, continued, suppressed, diminished, with a View to the same End.

An orderly, therefore, and exact Knowledge of Effects in such Cases, directs us in the best manner how to correct or remove the Cause.

Hence we, also, learn, that there are but two Ways as yet known, by which we arrive at the Knowledge of the Cause, and these are what we call the *methodic*, and the *specific*.

The *methodic* Way, in order to attain to the Knowledge of the proximate Cause, that the same may be removed, makes Use of the following Means and Assistances. First, (1.) It is very careful and exact in examining and digesting into Order the Phenomenon before-mentioned, and attentive in observing the Course of Nature. Secondly, (2.) If it observes a Failure of the vital Powers, under the Operation of such Remedies as are required for subduing of the Disease, it comes in to their Relief, by the Administration of Cardiacs, or by a Removal of the Impediments which obstruct the Operation of the Medicines designed to evacuate the morbific Matter. But, in the third Place, (3.) When it observes the vital Actions too much exalted; and by that means more likely to perplex Matters, and intangle rather than disengage the Cause of the Disease, it has recourse to moderating means, till their Impetus is restrained, and their Forces reduced within the Bounds required. This Intention is answered by aqueous Diluents, gentle Relaxants, soft glutinous Remedies, such as evacuate the material Cause of the immoderate Exaltation, Opiates, Anodynes. And, lastly, (4) By neither doing nor changing any thing but what appears necessary from the clearest Indications.

The *specific* Way, as it is called, removes the Cause of the Disease, by a simple Application of something which is known to be effectual for the Purpose, merely by Use, without attending to the four methodical means just mentioned. In this Case you have only to inquire the Name of the Disease, and then administer the *Specific*. Thus it is, for Example, in the Cure of an intermittent Fever by the *Peruvian* Bark, of Pain by Opium, and of every particular Poison, by its known, particular, proper, corrective, attractive, or expulsive Antidote. *Boerhaav. Institut. Med.*

VENER. Mercury. *Rulandus.*

VENEREA LUES. See LUES VENEREA.

VENERIS OESTRUM. See CLITORIS.

VENETICUS, *Venetus*, ἐνετὸς. An Epithet importing a glaucous or faint Sky-colour. Hence *Oculi Veneti* are Eyes affected with a Cataract. *Castellus.*

VENOSA ARTERIA. The same as VENA PULMONALIS. See PULMO.

VENTER, κοιλία, is taken in several Senses. With the more modern Anatomists it signifies, in the most extensive Acceptation, a remarkable Cavity, in which any one of the principal *Viscera* is contained. In this respect the whole Body is divided into three *Ventres*, the lowermost, commonly call'd the *Abdomen*; the middle *Venter*, call'd the *Thorax*; and the highest, or the Cavity of the Head. *Hippocrates* sometimes uses the Word κοιλίη, in a more restrained Sense, for the *Abdomen*, and the Cavity of the *Thorax*; and, sometimes, by way of Distinction, he calls the latter ἡ ἄνω κοιλίη, the upper *Venter*; and the *Abdomen* ἡ κάτω κοιλίη, the lower *Venter*. See 7 *Aph.* 38. with *Galen*, 1 *Com.* and *Lib.* 1. *de Morb.* But the Term *Venter*, κοιλίη, is most frequently to be understood, in a still stricter Sense, for the *Abdomen*, or Region between the Diaphragm and Pudenda. Instances of this are needless, as being every-where to be met with. And, in the last, and strictest Acceptation, it is sometimes restrained to the *Ventriculus*, or Stomach, and sometimes to the Intestines: As where we find *Hippocrates* speaking of the Laxness or Astriction of the *Venter*, κοιλίη, which are Affections chiefly regarding the Intestines, and, particularly, the great Intestines; whence some, as *Galen*, *Com.* 4. *in R. V. I. A.* and *Com. in* 7 *Aph.* 38. tells us, give the Name of *Venter*, κοιλίη, to the *Colon Intestinum*. The *Greek* κοιλίη (*Cœlic*), in a Passage 4 *Epidem.* signifies no more than the Excrements of the Belly; and the *Latin Venter* will bear the same Sense.

With the Chymists, *Venter* is the same as *Terra*, Earth; and *Venter equi* is *Fimus equinus*, Horse-dung. *Theat. Chym.* Vol. 1. p. 201, 378. *Rulandus. Castellus.*

VENTININA. A *Paracelsic* Term to signify the Art of Divining, or knowing by the Winds, the Courses and Dispositions of the Heavens and Stars, with respect to their good or bad Effects upon Mankind.

VENTOSÆ, from *Ventus*, Wind, Cupping-glasses applied without Scarification, so called. *Ventosa* is, also, an Epithet of a Disease, called, by *Avicenna*, *Spina ventosa*, or *Spina ventositas*, being a carious Affection of the Bones, attended with a Putridness. *M. A. Severinus* has an entire Book on this Subject, in his Treatise *de Pædarthrocace*. See Os.

Ventositas, Ventosity, is a Word often put for *Flatulentia*, Flatulence. *Castellus.*

VENTRALIS *Dispositio*, κοιλιακὴ διάθεσις. The *Cœliaca Passio.*

VENTRES, in the Language of some Authors, the same as *Cavitates*, Cavities. *Blancard.*

VENTRICULATIO, in *Cœlius Aurelianus*, *Lib.* 3. *Acut. Cap.* 17. is supposed to be the same as that he calls *Ventriculosa Passio*, *Lib.* 4. *Chron. Cap.* 3. that is, the κοιλιακὴ of the *Greeks*, or *Cœliaca Passio.*

VENTRICOSUS, VENTRICULOSUS, is either one with a great Belly, and the same with μεγαλόκοιλος (*megalocœlus*) or one labouring under the *Passio Cœliaca.*

VENTRICULUS. The Stomach. See COELIA, and INTESTINA.

VENTRILOQUUS, ἐγγαστρίμυθος, a Ventriloquist. See ÆSCULAPIUS.

VENTUS.

VENTUS. The Wind. The Knowledge of the Nature, Properties, and Virtues of the Winds, is often inculcated by *Hippocrates* as neceſſary for a Phyſician. *Ventus* is, alſo, a Word frequently occurring in the Works of the Chymiſts: Thus *Ventus albus* is Mercury; *Ventus rubens* is red Orpiment; *Ventus citrinus* is Sulphur; and *Ventus Hermetis*, in *Libavius*, is the Philoſophers Stone. *Caſtellus.*

VENULA, φλεβίον, a Diminutive of *Vena*, a Vein, is a ſmall Vein. The Term φλεβίον, in 6 *Epid. Sect.* 6. *Aph.* 2. ſignifies an Artery. See *Galen, Com. in Locum.*

VENUS.

Tho' the Word *Venus* was originally the Name of a heathen Goddeſs, celebrated as the Queen of Beauty and Love, yet it afterwards came to ſignify what we commonly call Venery; an Action which may either promote or deſtroy Health, according as it is regulated: For it is certain, from Experience, that too great a Retention of the Semen induces a Torpor and languid State of the Body, and often lays a Foundation for terrible nervous Diſorders. And whereas the Semen is, as it were, the Flower, and choiceſt Part of the Blood, and nervous Fluid, ſo Venery ought to be only moderately uſed, leſt too great an Evacuation of this Subſtance ſhould prove prejudicial to Health. An Ejection of the Semen requires a ſound and vigorous Habit of Body, becauſe it exhauſts the Strength, and weakens the Perſon. Hence *Pythagoras*, when aſk'd when Coition was to be uſed, wiſely anſwer'd, "When you have an Inclination to render "yourſelf weaker." For this Reaſon, weak Perſons, thoſe who are either too young or too old, and thoſe lately recover'd from a Diſeaſe, ought to abſtain from Venery: Nor ſhould Perſons indulge themſelves in Venery after ſtrong Application of Mind, or long Watchings; becauſe theſe Things have a Tendency to weaken the Body. As Venery only agrees with robuſt and vigorous Conſtitutions, ſo the Uſe of it is principally beneficial to Health after the Stomach is empty, and Perſpiration duly performed, eſpecially if the Perſon has ſlept well, us'd the Bath, and taken Aliments of a nutritive Quality, and eaſy Digeſtion. It is, alſo, to be obſerved, that Venery is more ſalutary in the Spring, than at any other Seaſon of the Year. All theſe Things are of ſuch a Nature, as to increaſe the Strength and Vigour of the Body, and, conſequently, favour Venery, or, at leaſt, prevent the bad Effects it might otherwiſe have. The Perſon who would often engage in Venery, ought to guard againſt all Surfeits, Hunger, Labours, exceſſive Study, Veneſections, Watchings, Purges, and every thing which can in the leaſt impair and deſtroy the Strength. Venery, according to *Celſus*, is beneficial, when it is neither ſucceeded by Languor nor Pain, but, inſtead of oppreſſing, augments the Strength. But it is by no means to be uſed after Meals, Labour, or Watching. But as Moderation, in every thing, contributes to Health; ſo, likewiſe, does temperate Venery: And every one ought carefully to conſider what his Conſtitution can bear. For a very robuſt Perſon may ſafely indulge himſelf in a Degree of Venery which would remarkably weaken one who has a worſe Conſtitution. Venery, according to *Celſus*, is to be abſtained from in the Summer; becauſe, at that time, it is ſubject to throw the Humours into too violent Commotions. It is, alſo, found, from Experience, that immoderate Venery weakens the Force and Tone of the Solids, and brings on Colics and Cardialgias. It is, alſo, certain, from Experience, that Venery both alleviates and removes various Diſorders incident to Women: For the male Semen, conſiſting of a fine elaſtic Lymph, rarefies and expands not only the Eggs, but, alſo, the Blood and Juices in the Veſſels of the Uterus, the Fibres of which it likewiſe ſtrengthens. Hence the Reaſon is obvious, why Venery, or Coition, cures Women, rendered cachectic by a Suppreſſion of the Menſes, and generally reſtores that ſalutary Evacuation. "For, ſays *Hippocrates*, in his Book *de Genitura*, Coition "warms the Blood, and renders the menſtrual Diſcharge "eaſier:" For a Defect of the Menſes frequently happens on account of the Narrowneſs and Contraction of the Veſſels of the Uterus. *Hoffman.*

VER, ἦρ, the Spring. Diſeaſes moſt incident to this Seaſon of the Year, are Lippitudes, Puſtules, Hæmorrhages, Abſceſſes, Melancholy, Madneſs, Epilepſies, Quinſies, cold Rheums in the Head, and Diſtillations: Thoſe Diſeaſes, alſo, which affect the Joints and Nerves, and have their Paroxyſms and Remiſſions, begin and repeat their Attacks chiefly at this Seaſon. *Celſus, Lib.* 2. *Cap.* 1.

The moſt healthy Seaſon of the Year is the Spring; next to that the Winter; the Summer is more dangerous; but the moſt dangerous of all the four, by many Degrees, is the Autumn. *Ibid. in Init.*

In Spring we muſt ſomewhat diminiſh the Quantity of Food uſed in Winter, and increaſe that of our Drink, which, however, muſt be more diluted, or ſmaller, than before: We are to eat more freely of Herb and Greens, and we are to paſs from boiled to roaſt Meat, by Degrees: Venery may moſt ſafely be indulged in this Seaſon. *Ibid. Lib.* 1. *Cap.* 3.

VERATRUM.

The Characters are;

The Leaves are fibrous, and complicated, as it were, into Folds: The Flowers are roſaceous, hexapetalous, naked, furniſhed with ſix Stamina, and collected into Spikes: The Ovary grows in the Placenta, and conſiſts of three Pods, each furniſhed with its Tube, and becomes a Fruit, conſiſting of three Sheaths, collected into an Head, and full of oblong Seeds, much like Grains of Wheat, marginated, and ſurrounded with a foliaceous Wing.

Boerhaave mentions two Sorts of Veratrum; which are,

1. Veratrum; flore ſubviridi. *Tourn. Inſt.* 272. *Boerh. Ind. alt.* 296. *Helleborus albus, Elleborus.* Offic. *Helleborus albus.* Ger. 356. Emac. 440. Raii Hiſt. 1. 168. *Helleborus albus flore ſubviridi.* C. B. P. 186. *Helleborus albus flore ex viridi albeſcente.* J. B. 3. 634. *Helleborus albus vulgaris.* Park. Theat. 217. Parad. 346. WHITE HELLEBORE.

The Roots of white Hellebore are thick at the Head, of a white Colour on the Inſide, and very full of Fibres all round, of an hot nauſeous Taſte; from which ſpring many large nervous Leaves, of a long oval Form, and a bright-green Colour, encompaſſing the Stalk, which grows to be two or three Feet high, having ſmaller and narrower Leaves growing on it, and branching out into ſeveral Spikes of imperfect Flowers, each cut into ſix Segments of greeniſh, and, in ſome Plants, of darkiſh-purple Leaves, ſucceeded by triangular Seed: It grows in the mountainous Parts of *Swiſſerland*, *Auſtria*, and *Stiria*; and flowers in *June* and *July*.

The Roots of this Hellebore, which are the only Parts in Uſe, are a ſtrong Cathartic, working upwards and downwards with great Violence; and, therefore, but rarely uſed inwardly now-a-days, though frequently given by the Antients, eſpecially to ſtrong robuſt Bodies, and in Diſtempers that needed forcible Evacuations. It is more uſed as a Sternutatory; it cauſing violent Sneeſing, and, therefore, to be uſed with Caution, and mixed with milder Ingredients: They are of Service outwardly, in all Diſtempers of the Skin, as Tetters, Scabs, Itch, and other Deformities thereof.

The only Officinal Preparation is the *Electuarium ex Helleboro. Miller's Bot. Off.*

The Root of white Hellebore, which is the only Part uſed in Medicine, purges ſo violently, both upwards and downwards, that it is rarely uſed internally; but the black Hellebore takes its Place. However, as *Tragus* ſays, if it be macerated four-and-twenty Hours in Wine or Oxymel, and afterwards dried, it may be given to the Weight of half a Dram, in Wine, to mad and melancholy Perſons. Both Hellebores, ſays *Geſner*, tempered with Vinegar and Honey, and boiled to a Syrup, are an harmleſs Medicine, and ſays, he has often found them, ſo uſed, very ſerviceable in moſt phlegmatic Diſorders, eſpecially of the Head and Thorax, as the Aſthma, Dyſpnœa, and Epilepſy; for they purge admirably, both by Stool and Urine, and by Diaphoreſis, without Perturbation.

In the Uſe of white Hellebore, ſays *C. Hoffman*, two things are principally to be regarded; the firſt is, that the Diſeaſe be very obſtinate; the other, that the Patient be very ſtrong; for which Reaſons, this Root is not to be exhibited to old Perſons, or Children; nor to Women of a tender Conſtitution: A third Requiſite might be added, which is, that nothing ought to be done with it till after a careful Preparation, both of the Body and of the Hellebore.

The moſt antient Way of exhibiting it was with Radiſh, and this was done three Ways; the firſt was, by thruſting a Radiſh through the Root of the Hellebore, and ſuffering it to remain therein four-and-twenty Hours; after which they threw away the Root, and gave the Radiſh; or, ſecondly, they infuſed the Radiſh, after it was pulled out of the Root of the Hellebore, in Oxymel, and only gave the Patient the Oxymel; or, laſtly, left the Radiſh in the Root only for a Night, and the next Morning, throwing away the Hellebore, infuſed it in Oxymel, and gave the Infuſion to the Patient. The beſt Way of preparing it, according to *Parkinſon*, is to infuſe it in the Juice of a Quince; or put it in a Quince, and ſo bake it in an Oven, or under the Aſhes: For if the Patient be in danger of Suffocation from taking of Hellebore, eating of Quinces, or the Juice or Syrup of Quinces, are a preſent Remedy. The Root boiled in Vinegar, and held for ſome time in the Mouth, eaſes the Tooth-ach: Boiled in a Lixivium, and the Head waſhed with it, it kills and abſterges Lice and Scurf, and has the ſame Effect, if mixed with ſome Ointment: It cures the Itch, Tetters, and creeping Ulcers: And, given in Food, is mortal to many Kinds of Animals, as Moles, Mice, Lizards, Birds, and others. The Powder, ſnuffed up the Noſtrils, cauſes Sneezing, whence it is called in *Engliſh Sneezewort.*

The *Spaniards* have a Method of preparing a Poiſon of the Juice of the Roots, fermented in an earthen Pot, with which

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they poiſon their Arrows, in order to make the Wounds they inflict with them incurable. What is remarkable in this Poiſon, is, that, being drank, it is harmleſs, or, at leaſt, not deadly; but is ſo only when infuſed into a Wound, and mixed with the Blood; but the ſame is true of the Poiſon of the Viper, which, taken inwardly, is ſucceeded by no pernicious Symptom, but conveyed to the Blood, through the Orifice of a Wound, or a Puncture, immediately excites moſt formidable Symptoms, which, if not remedied, will, in a ſhort time, deſtroy the Patient.

Both Kinds of Hellebore were highly celebrated by the Antients, for curing Maniacs; and at preſent they are never uſed but in great and difficult Caſes, as the Epilepſy, Vertigo, Mania, Dropſy, Sciatica, Convulſions, and the like. *Raii Hiſt. Plant.*

2. Veratrum; flore atro-rubente. *T.* 272. *Helleborus, albus, flore atro-rubente.* C. B. P. 186. *Boerh. Ind. alt. Plant. Vol.* 1.

The Leaves, Roots, Stalks, or Flowers of white Hellebore, applied to the Skin of a living Perſon, excoriate the Part, and produce an Exulceration: They, alſo, burn the Tongue. The true Veratrum of *Hippocrates* is celebrated on many Accounts. This Plant has a cauſtic and burning Juice, which attracted into the Noſtrils, after the manner of Snuff, excites an invincible Sneezing; whence it appears to be a Ptarmic in the higheſt Degree. Taken into the Stomach it purges upwards and downwards, with ſevere Gripings. *Hippocrates* ſays, that it purges the moſt remote Parts of the Blood, and, therefore, before its Adminiſtration, he cauſed his Patients to bathe; and ordered them to drink Oil and Honey for ſome Days; by which means all the Parts being relaxed, he then adminiſtered Veratrum, and directed Geſtation, either on Horſeback, or in a Ship: When the Medicine began to work, he ordered his Patients Reſt. The ſame Effect would indeed, in ſome meaſure, follow from a right Uſe of our Veratrum: But *Salmaſius*, writing of the *Veratrum*, ſays, that its Leaves are very finely jagged, which makes me doubt whether it be the ſame with ours. White Hellebore is much ſtronger than black Hellebore, and ſometimes excites Convulſions, unleſs exhibited with great Prudence: Hence it is never given in Subſtance but to Perſons of the moſt robuſt Conſtitutions; and in melancholy and maniac Caſes; and then with great Caution: It is, alſo, exhibited in Quartan Fevers; in which an Ounce of the Decoction, taken inwardly, has often had ſurpriſing Effects. It is a Plant, however, more adapted to Horſes than Men; though uſed as a Sternutatory in ſoporous Diſeaſes, as the Apoplexy and Lethargy. *Hiſt. Plant. adſcript. Boerhaav.*

Hippocrates purged with white Hellebore, in an immoderate Flux of the Menſes, before the Uſe of Aſtringents and Sweeteners: He, alſo, uſed white Hellebore as a Vomit; and gave it to thoſe that were melancholy, or mad.

He, alſo, gave it in Fluxions, which fell upon the Noſe, the Ears, or the Mouth, or cauſed obſtinate Pains of the Head; an unuſual Laſſitude and Heavineſs; a Weakneſs of the Knees, or Swelling of the whole Body: He gave it, alſo, to phthiſical Patients, with a Decoction of Lentils.

He gave white Hellebore, in a Leucophlegmatia, and in the Cholera Morbus.

To ſome he directed it faſting; but to moſt, after Supper. *Le Clerc* thinks, becauſe the Hellebore being mixed with the Aliment in the Stomach, would loſe a Part of its Stimulus. Sometimes he gave the Herb Seſamoides, and Hellebore, together.

In ſome Caſes he gave the *μαλθακὸς ἑλλέβορος*. This *Le Clerc* thinks was ſome particular Preparation of Hellebore, which took off, in ſome degree, the Violence of its Operation.

Celſus, Lib. 3. *Cap.* 26. recommends white Hellebore in an Apoplexy.

It is ſaid by ſome, that the Uſe of Hellebore was firſt diſcovered by a Man of *Anticyra*, who made an Experiment with it upon *Hercules*, who was mad; and who was cured by it.

Herophylus had a great Eſteem for white Hellebore.

Aretæus ſometimes purged with Hellebore, and was extremely fond of it.

He ſays it is not only a Vomit, but, alſo, the moſt efficacious and powerful Purge of all others: This good Service it does, he ſays, is not owing to the great Diſcharge of Humours it makes; for in the Cholera Morbus, there is the ſame Sort of Evacuation; nor is it owing to the violent Efforts it cauſes; for Sailing upon the Sea cauſes more violent Efforts: But it is owing to a particular Virtue in it, which cannot be enough admired; for though ſometimes it purges but little, yet it, nevertheleſs, cures. In old Diſorders, where all other Remedies have failed, Hellebore has ſucceeded. To thoſe that breathe difficultly, it renders Reſpiration eaſy: To ſuch as are pale it gives Colour; and makes thoſe plump that were before lean.

Alexander preſers the *Armenian* Stone to Hellebore, as a Purge, in Melancholy; becauſe it does it ſafely and effectually; without any ill Conſequence, or Danger, which the other rough Medicine too often occaſions.

This Medicine, ſo famous amongſt the Antients, was grown into utter Diſuſe, till *Aſclepiodotus* revived it, about the Year 500, and did many wonderful Cures with it, in the moſt obſtinate Caſes and Diſeaſes.

Cophon gives a very extraordinary Receipt, to feed a Chicken with white Hellebore, and after eight Days to kill it, and make Broth of it, which, he tells us, is a very good gentle Purge.

Gilbertus Anglicus orders Hellebore, Sena, and Spurge, to be diſtilled with Wine, for a Purge in a Vertigo.

VERATRUM NIGRUM. See ASTRANTIA NIGRA. It is, alſo, a Name for ſeveral Sorts of HELLEBORUS; which ſee.

VERBASCULUM CYANOIDES. A Name in *Boerhaave* for the *Cyanus*; *montanus*; *latifolius*.

VERBASCULUM SALVIFOLIUM. A Name for the *Phlomis*; *fruticoſa*; *folio ſubrotundo, breviore*; *flore luteo*.

VERBASCULUM is, alſo, a Name for ſeveral Sorts of PRIMULA VERIS; which ſee.

VERBASCUM.

The Characters are;

The Leaves are alternate, and hoary, or of a ſmutty Green, and large: The Flower is monopetalous, rotated, pentapetaloidal, diſpoſed in a long Spike, and growing very cloſely to a Stalk, ſhorter than the Pedicle: The Fruit is ovated, acuminated, and divided by an Interciſure into two Capſules, or Cells.

Boerhaave mentions eleven Sorts of Verbaſculum; which are,

1. Verbaſcum; mas; latifolium; luteum. *C. B. P.* 239. *Raii Hiſt.* 2. 1094. *Synop.* 3. 287. *Tourn. Inſt.* 146. *Boerh. Ind. alt.* 227. *Verbaſcum, Tapſus Barbatus.* Offic. *Verbaſcum vulgare flore luteo magno, folio maximo.* J. B. 3. 871. *Verbaſcum album vulgare ſive Tapſus Barbatus communis.* Park. Theat. 60. *Tapſus Barbatus.* Ger. 629. Emac. 773. MULLEIN.

The Stalk of Mullein is round and hoary, ariſing, uſually, ſingle, about as tall as a Man: The lower Leaves are large, about a Foot long, and three or four Inches broad, ſharp-pointed at the End, ſlightly indented about the Edges, covered with an hoary Down, or Woolineſs: Thoſe which grow upon the Stalk, have their middle Ribs affixed to it for half their Length, which make the Stalk appear winged: The Flowers grow in a long Thyrſus, ſet thick and cloſe together, each conſiſting of one Leaf, cut into five Segments, of a yellow Colour, with as many woolly Stamina, having purple Apices: The Seed-veſſels are oblong and pointed, opening in two, when ripe, and ſhewing the ſmall browniſh Seed: The Root is generally ſingle, with many Fibres, but not very large, for the Tallneſs and Bigneſs of ſuch a Plant. It grows in Highways, and by Hedge-ſides; and flowers in *July*. The Leaves are uſed.

They are accounted pectoral, and good for Coughs, Spitting of Blood, and other Affections of the Breaſt: They are, likewiſe, good for Griping and Colic Pains, ariſing from ſharp Humours. Outwardly uſed, in Fomentations or Fumigations, they are reckoned a Specific againſt the Pains and Swelling of the Hæmorrhoids, or Piles. *Miller's Bot. Off.*

The Leaves of Mullein are of an herby Taſte, a little ſaltiſh and ſtyptic; the Smell like Elder; and give a pretty deep Tincture of Red to the blue Paper: The Flowers give it a deeper: They are, alſo, ſtyptic, but ſweet. It is likely that the Salt of this Plant, in ſome meaſure, reſembles that of Coral. That of the white Mullein contains a great deal of Acid, and a little Sal Ammoniac; but is united with a great Quantity of Sulphur and Earth; ſo that it is very lenifying and vulnerary. The Decoction of this Plant is given to drink for the Colic, Dyſentery, and Looſeneſs. *Tragus* made uſe of the Root, boiled in Red-wine. *Matthiolus* made a Gargariſm for the Throat, with a Decoction of its Leaves and Flowers, and preſcribed it for a violent Cough. Mullein is boiled in Cows-milk, for the Teneſmus and Hæmorrhoids: The Patient muſt drink two Glaſſes of it every Day: Take it in a Glyſter, and bathe the Fundament with it: Some add to it the Leaves of Oak and wild Tanſy. To ſtop the Flux of the Piles, and cure the Dyſentery, the white Mullein muſt be boiled in the Water which the Smiths uſe to quench their Iron in. For the Gout and Inflammation of the Piles, the Juice of the white Mullein is prepared after the following manner:

Bruiſe the Leaves and Flowers of this Plant; let them rot in wooden Tubs, well covered and plaiſtered: After three Months Digeſtion, collect the Juice, and expreſs the Faces, and keep it in Bottles well ſtopped.

Some leave the Flowers only to rot in Bottles. *Tragus* would have them expoſed to the powerful Heat of the Sun: Some bury them in a great Dunghil. It is affirmed that Aloes, diſſolved in the Juice of Mullein, and thicken'd to the Conſiſtence of an Extract, do not irritate the Piles, nor cauſe any Hæmorrhage; but it is more ſafe to correct it, by diſſolving it in Water, and ſeparating the reſinous Part that remains upon the grey Paper, by Filtration, and cauſes the Irritations and Hæmorrhages. They evaporate, afterwards, the filtrated Solution to the Conſiſtence of an Extract. *Tragus* and *Matthiolus* ſay, that the diſtilled Water of the Flowers of the white Mullein is good for Burns; for the Gout, St. *Anthony*'s Fire, and all cutaneous Diſeaſes. This laſt Author preſcribed for the Piles, a Cataplaſm made with the Leaves of Mullein, and Leeks, together with ſome Yolks of Eggs, and Crums of Bread. *Martyn's Tournefort.*

2. Verbaſcum; fœmina; flore luteo, magno. *C. B. P.* 239.

3. Verbaſcum; fœmina; flore albo. *C. B. P.* 239.

4. Verbaſcum; mas; anguſtioribus foliis; floribus pallidis. *C. B. P.* 239.

5. Verbaſcum; Lychnitis; flore albo; parvo. *C. B. P.* 240. *Tourn. Inſt.* 147. *Boerh. Ind. alt.* 228. *Verbaſcum album.* Offic. *Verbaſcum mas foliis longioribus.* Park. Theat. 60. *Verbaſcum flore albo parvo.* J. B. 3. 873. Raii Hiſt. 2. 1095. Synop. 3. 287. *Verbaſcum Lychnitis Matthioli.* Ger. Emac. 775.

MULLEIN WITH WHITE FLOWERS.

It grows by the Sides of Paths in ſeveral Parts, and propagates itſelf yearly from ſhedding its Seed. The firſt Year it bears no Stalk, but only Leaves ſcattered on the Ground: When the Stalk is grown it periſhes. The Virtues are the ſame with thoſe of the common and black Mullein. *Ray. Dale.*

6. Verbaſcum; nigrum; folio Papaveris corniculati. *C. B. P.* 240.

7. Verbaſcum; nigrum; flore ex luteo purpuraſcente. *C. B. P.* 240. *Tourn. Inſt.* 147. *Boerh. Ind. alt.* 228. *Verbaſcum nigrum.* Offic. Ger. 631. Emac. 775. *Verbaſcum nigrum vulgare.* Park. Theat. 61. *Verbaſcum nigrum flore parvo apicibus purpureis.* J. B. 3. 873. Raii Hiſt. 2. 1095. Synop. 3. 288.

BLACK MULLEIN.

This has a Root and Stalk, like thoſe of the common Mullein; only the Stalk is leſs hairy: The Leaves, alſo, are leſs, more rare, and placed alternately: They, alſo, reſemble thoſe of Sage; but are much larger, and fetid.

It grows in ſeveral Places in *Cambridgeſhire*. And *J. Bauhine* tells us, that it is very frequently to be met with about *Baſil* and *Pompelgard*, on the upper *Rhine*. It flowers in *July* and *Auguſt*, and the Root, Leaves, and Flowers are uſed. The Root is aſtringent, and of Service in a Looſeneſs. The Leaves and Flowers have the ſame Virtues with thoſe of the common Mullein. *Ray. Dale.*

8. Verbaſcum; Blattariæ foliis; nigrum; amplioribus foliis aluteis apicibus purpuraſcentibus. *Flor.* 2. 98.

9. Verbaſcum; foliis nigris; amplis; floſculis albis; apicibus purpureis; perenne.

10. Verbaſcum; humile; Alpinum; villoſum; Borraginis folio & flore. *H. L.* 619. *T.* 147. *Sanicula, Alpina, foliis Borraginis, villoſa.* C. B. P. 243. *Auricula Urſi, Myconi, piloſa, cærulea.* J. B. 3. App. 869.

11. Verbaſcum; Orientale; Sophiæ folio. *T. Cor.* 8. *Boer. Ind. alt. Plant. Vol.* 1.

The firſt, ſecond, third, and fourth Species are reckoned among emollient Herbs. The Leaves bruiſed, and applied to any Part affected with Pain, remove the ſame: They are of a demulcent Quality; for which Reaſon they are an Ingredient in Decoctions, Clyſters, and Cataplaſms, in all Diſorders where Acrimony offends; being of great Service by their inſipid, viſcous, emollient, and ſmegmatic Juice. Of the Flowers, with a Solution of Oil of Olives, is prepared Oil of Verbaſcum, which is very good to conſolidate Wounds, and to mitigate Pains; and taken inwardly it is a Laxative. The Flowers are made into a Conſerve, which is excellent againſt all Hæmorrhages, Spitting of Blood from Contuſions, bloody Urine, immoderate Fluxes of the Menſes, or Lochia, the Teneſmus, Dyſentery, and the Falling down of the Uterus and Anus. The Decoction of the Leaves is effectual in the Colic, Diarrhœa, and Dyſentery; and a Decoction of the Flowers makes a good Gargariſm in the Quinſey, and a violent Cough: The Leaves boiled in Milk, are effectual in the Teneſmus and Hæmorrhoids. The Juice of this Plant is of great Efficacy in the Gout. The Decoction of the Leaves in Water is uſed in Clyſters, as an Emollient for the Hæmorrhoids; and may, alſo, be injected into the Uterus, for the Purpoſe of mollifying. The Plant, in ſhort, is emollient, aperient, and relaxing; and therefore enters the Compoſition of all emollient Clyſters and Cataplaſms. Outwardly the Leaves and Flowers are uſeful Topics, in mitigating all Kinds of Pain, particularly in Tumors of the Anus, and in the Haemorrhoids. *Hiſt. Plant. adſcript. Boerhaav.*

VERBASCUM SYLVESTRE. A Name for the *Phlomis*; *fruticoſa*; *Salviæ folio latiore & retundiore*; and for the *Phlomis*; *fruticoſa*; *Salviæ folio longiore & anguſtiore.*

VERBASCUM TURCICUM. A Name for the *Primula veris*; *Conſtantinopolitana*; *flore albo.*

VERBENA.

The Characters are;

The Calyx is long, tubulous, and quinquefid; the Flower, alſo, quinquefid. The Seeds fill the whole Pericarpium: And the Flowers grow in Heads, or Spikes, and not in Whorles.

Boerhaave mentions eight Sorts of *Verbena*; which are,

1. Verbena; Americana; altiſſima; Urticæ foliis anguſtioribus; ſpicis brevioribus; floribus cæruleis. *Flor.* 2. 80. *M. H.* 3. 408.

2. Verbena; Americana; altiſſima; Urticæ foliis anguſtioribus; ſpicis brevioribus; floribus purpureis. *Flor.* 2. 81.

3. Verbena; Americana; altiſſima; Urticæ foliis anguſtioribus; floribus albis. *Flor.* 2. 81.

4. Verbena; Canadenſis; folio Urticæ. *Zanon.* 203. *H. R. Par. Flor.* 2. 81. *M. H.* 3. 408.

5. Verbena; Luſitanica; latifolia; procerior. *T.* 200.

6. Verbena; communis; flore cæruleo. *C. B. P.* 269. *Boerh. Ind. alt.* 187. *Tourn. Inſt.* 200. *Verbena.* Offic. *Verbena communis.* Ger. 580. Emac. 718. *Verbena vulgaris.* J. B. 3. 443. Raii Hiſt. 1. 535. Synop. 3. 236. *Verbena mas ſive recta & vulgaris.* Park. Theat. 678. VERVAIN.

The Root of Vervain is white, ſlender, and full of Fibres, and ſpreading much about: The Stalk is ſquare and firm, ſomewhat hairy, and often of a purpliſh-brown Colour: The Leaves are long, narrow, and ſharp-pointed, cut into ſeveral Laciniæ, ſomewhat rough and wrinkled, growing two at a Joint: The Flower grows towards the Top, in ſlender Spikes, being ſmall, and of a whitiſh-purple Colour, of one Leaf, cut into five Segments; the two uppermoſt ſupplying the Place of the Galea; and the three lower, that of the Labella: It being reckoned among the verticillate Plants, having four ſmall longiſh Seeds, ſet together in a ſmall Calyx. It grows in Highways near Towns and Villages; and flowers in *July.*

The whole Herb is uſed, being accounted cephalic, and good againſt Diſeaſes from cold and phlegmatic Cauſes: It opens Obſtructions of the Liver and Spleen; helps the Jaundice and Gout; and, applied outwardly, is reckoned vulnerary, and good for ſore, watery, inflamed Eyes. *Miller's Bot. Off.*

This Plant yields, by the chymical Analyſis, ſeveral acrid Liquors, a great deal of Oil, and a pretty deal of volatile concrete Salt and Earth: Thus it may contain ſome Sal Ammoniac, united with a great deal of Sulphur. Vervain is vulnerary, deterſive, aperitive, and febrifugous. For the Green-ſickneſs, drink a Night's Infuſion of it in Wine. *Cæſalpinus* recommends the Powder of it for the Dropſy. The Extract or Juice of Vervain cures intermitting Fevers: A Tea of it is good for the Vapours: The diſtilled Water, or depurated Juice, cleanſes the Eyes, and clears the Sight. A Gargariſm of it is good for the Diſeaſes of the Throat. The Cataplaſm of its Leaves, bruiſed with Rye-meal, and the Whites of Eggs, is reſolving: The Juice and Infuſion of its Tops in Oil cure Wounds. *Martyn's Tournefort.*

The Antients aſcribe very many Virtues to Vervain, which are ſummed up by *Schroder*, as follows: Vervain is cephalic and vulnerary; its principal Uſes are in Pains, and other Affections of the Head, from cold Humours, in Affections of the Eyes and Breaſt, in old Coughs, and the like: In Obſtructions of the Liver and Spleen, the Jaundice, Gripes of the Belly, and the Dyſentery: It is an excellent Lithontriptic, reſtrains libidinous Deſires, cures a tertian Fever, mitigates the Pain of the Gout, cures Wounds, and facilitates the Birth: Externally it is effectual in the Head-ach, Tooth-ach, Alopecia, Melancholy, Lippitude, Weakneſs or Redneſs of the Eyes: In the Quinſey and Hoarſeneſs, a Cataplaſm thereof being applied round the Neck: In a Tumor of the Glands of the Fauces, being uſed in a Gargariſm: In Pains of the Spleen, being applied with Hogs Fat; alſo, in mitigating the Gout, in Affuſion of Wounds, and Abſterſion of putrid Ulcers, in the Falling down of the Anus, the Manifar, and the like.

Vervain being endued with ſo many Virtues, it is no Wonder that it was thought by the Antients, to deſerve the Name of ἱερὰ βοτάνη (*Hiera Botane*), the *Holy Herb.* For a Tumor of the Spleen, pound Vervain with the Whites of Eggs, and Barley, or wheaten Meal, and make them into a Cataplaſm, which being wrapt in a thin Linen Cloth, apply to the Part affected upon the Tumor, where it attracts, as it were, the thinner Part of the Blood: Some add Betony. This is a popular Remedy. *Chapman.*

Vervain, applied upon the Head, or laid under the Pillow, or made into a Plaiſter, with very ſtrong Vinegar, and Oil of Roſes, eaſes the Pain of the Head proceeding from Wine. *D. Soame. Raii Hiſt. Plant.*

The

The Root of Vervain is accounted by ſome as an effectual Amulet againſt ſtrumous Tumors; and hung about the Neck, by ſome old Women, as an efficacious Medicine for thoſe Purpoſes. *Dale.*

7. Verbena; tenuifolia. *C. B. P.* 269. *M. H.* 3. 419. *Verbenaca ſupina.* J. B. 3. 444. Dod. p. 250.

8. Verbena; nodiflora. *C. B. Prodr.* 125. *Ic. & Deſcr. Boerh. Ind. alt. Plant. Vol.* 1.

It is called *Verbena*, from *Verrere*, to ſweep, becauſe it formerly ſerved to ſweep the Altar; and *Periſtereum*, from περιστερὰ (*Periſtera*) a Dove, becauſe the Doves are delighted with it. There is no Herb ſo much commended by the Antients as this for vulnerary Purpoſes, becauſe it expels heterogeneous Particles, whence it is called *Herba Vulneraria*, or a Species of *Sideritis*: There is no Plant on which the Poets have more exerciſed their Talent of Fiction; and none more uſed in Sacrifices, whence it was called the *Holy Herb*, and *Menſa Jovis*, or *Jupiter's Table*, with which they ſtrewed as well as ſwept their Altars: Whence the Servant in *Terence* ſays, *Tolle Verbenam ab Ara*, "Take off the Vervain from the Altar." There is, alſo, no Plant of which the Magi have related more ridiculous Fables; for Inſtance, they ſay, that if any Perſon deſcribe a Circle about it, and then pluck it with his Left Hand, before he has ſeen either Sun or Moon, he ſhall be proſperous in whatever he undertakes; but if he pulls it with his Right Hand, all Things ſhall happen croſs, and contrary to his Deſires. Theſe Superſtitions are not yet quite eradicated from the Minds of Men; for there are Authors who ſtill ſay, that Children, by chewing this Herb, will breed their Teeth without Pain; and it is ſaid to be effectual againſt Convulſions and Inchantments.

Vervain is aperitive, deterſive, depurating, corroborating, and a Febrifuge. The Leaves infuſed in Wine, are ſerviceable in the Chlorоſis and Jaundice. The Powder of the Leaves is good for the Dropſy; and the Juice cures intermittent Fevers. An Infuſion of the Leaves, after the manner of Tea, is good in the hyſteric Paſſion: The Leaves bruiſed, and applied in the Form of a Cataplaſm, are a very good Reſolvent in Pains of the Sides, and the Pleuriſy. The diſtilled Water, as well as the Juice, cure Inflammations of the Eyes, and all Sorts of Wounds, increaſe Milk in Women who give Suck, break and expel the Stone in the Kidneys and Bladder, and give Relief under a flatulent Colic. *Hiſt. Plant. adſcript. Boerhaav.*

VERBENACA RECTA. A Name for the *Verbena*; *communis*; *flore cæruleo.*

VERBENACA SUPINA. A Name for the *Verbena*; *tenuifolia.*

VERBERA, *Plagæ*, *Percuſſiones.* Blows, Stripes, Percuſſions. They are reckoned among the Cauſes of Diſeaſes; and ſometimes find a Place among Remedies. Thus we are aſſured by *Rolfinkius*, that a certain Empiric cured mad and melancholy Perſons, merely by the Uſe of Whips and Cudgels.

VERBESINA. See BIDENS.

VERDETUM is a green Colour, produced from the Vapour of ſtrong Vinegar, poured on Copper-Plates.

VEREDARII, *Vermes*, Worms. The ſame as CUTAMBULI; which ſee.

VERETRUM. The ſame as PENIS.

VERGILIÆ. See PLEIAS.

VERMES. Worms.

Worms are living Animals, of various Figures, Structures, and Bulks, which are formed in the Inteſtines, from the Seeds of ſome Inſects, taken with the Aliments. Theſe Animals are nouriſhed and enlarged by a certain putrid Juice, and greatly weaken and injure the Body, and its ſeveral Functions.

Tho' Perſons at no Period of Life are abſolutely free from Worms, yet they are moſt incident to Infants, and Children between Ablactation and the fourteenth Year of their Age.

We find from Experience, that, in the human Body, there are various Species of Worms, which, by the antient, as well as modern Phyſicians, are divided into three principal Kinds: The firſt are round, ſmooth, and hardly a Span in Length, by which Marks they are diſtinguiſhed from other Worms. Theſe have their principal Seat in the ſuperior ſmall Parts of the *Jejunum* and the *Ileum*; thence proceeding, ſometimes, to the Stomach, they go as far as the Mouth, or are vomited up: Theſe are generally the Worms which, according to *Hildanus*, *in Cap.* 1. *Obſ.* 57. are principally form'd in Children, and are ſometimes found conglomerated in a large Ball, and ſecurely lodg'd in the *Ileum*, whoſe Membranes they often corrode, ſo as to penetrate into the Cavity of the Abdomen.

The ſecond Species are thoſe which, on account of their broad Figure, like a Bandage, are call'd Long Worms, or *Teniæ*. They are ſo long, as to exceed two, and, ſometimes, ten Feet in Length. *Platerus*, in Adults, obſerved them forty Feet long. See *M. N. C. An.* 3. *Obſ.* 29. and *Bartholin. Hiſtor. Anatom. Cent.* 3. *Obſ.* 14. Theſe generally poſſeſs the whole Tract of the Inteſtines, but eſpecially the *Ileum*, and are frequently obſerved without Heads and Tails; for they are not evacuated whole, but in Pieces reſembling the Seeds of Gourds, or Cucumbers, which, according to *Spigelius*, *in Cap.* 15. are nothing but the middle groſs Nodes of the Worms remaining, after their lateral and membranaceous Parts are conſum'd by the Putrefaction.

The third Species of Worms are the *Aſcarides*, or ſmall ſlender Animals, which, lodging in the large Inteſtines, eſpecially the *Rectum*, generally ſo vellicate it, as to produce a *Teneſmus*. They are, alſo, frequently diſcharged, in incredible Numbers, with the Excrements.

Worms in the Inteſtines are known, if Children ſtart in their Sleep, and are affrighted when waked out of it; if there is an Itching of the Noſtrils, a fetid Breath, a Thirſt, a Diſcharge of the *Saliva*, a Paleneſs of the Countenance, with intermediate Fluſhings, Coldneſs of the Extremities, a turbid Urine, an Inflation of the Belly, ſometimes an exceſſive, and at other Times a languid Appetite, irregular Fluxes, and other Symptoms of a like Nature: But as theſe Signs are common to other Diſeaſes, ſo there can be no better, nor more infallible Criterion, than the Worms themſelves, diſcharged by Stool.

The Symptoms familiar to Patients of this Kind, are generally very different, according to the Parts where the Worms are lodg'd; but they are frequently ſo very violent, and ſometimes ſuch Convulſions of the Limbs are excited, that the Country People often think the Patient bewitched: But, more particularly, if the Worms are lodged in the Stomach, they produce Nauſeas, Cardialgias, Syncopes, Toſſings of the Body, Grindings of the Teeth, Deliriums, and even Death itſelf, at laſt. When they are lodged in the ſmall Inteſtines, they excite Gripes, biting Pains about the Navel, a voracious Appetite, a Swelling of the Belly, and Fluxes; and when they are lodged in the *Inteſtinum Rectum*, they produce uneaſy Titillations, Corroſion, and an almoſt perpetual Teneſmus.

Worms are frequently accompanied with putrid, anomalous, and ſlow Fevers, like thoſe of the quotidian Kind; but theſe Animals more frequently accompany or follow other Diſorders, ſuch as the Meaſles, and Small Pox; and not only increaſe the Symptoms, and impair the Strength, but, alſo, render the Diagnoſtic, Prognoſtic, and Method of Cure, highly difficult.

At certain Seaſons of the Year, eſpecially in the Autumn, when, under a moiſt and unequal State of the Air, catarrhal Fevers, Meaſles, and Small Pox, rage epidemically, Worms are generally moſt copiouſly generated; becauſe, at that time, the Strength of the Solids being impaired, more peccant and viſcid Humidity, diſpoſed to Corruption, is accumulated in the Body; by which means, the verminous Seed receives more Nouriſhment and Supply. This is, alſo, the Reaſon why Infants, Children, and Women, eſpecially if habituated to a ſedentary Life, and a bad Regimen, are more terribly afflicted with Worms than young Perſons, Adults, and Men; whoſe Solids being ſtronger, and their Circulation briſker, do not ſo eaſily generate peccant and viſcid Juices.

As for the Cauſes, certain Aliments favour the Generation of Worms; and theſe are ſuch as partly produce peccant and pituitous Juices; and partly ſuch as contain the Eggs and Seeds of Inſects, which are, with them, conveyed into the Body. Of this Kind are Milk-meats, Cheeſe, ripe Fruits, Sweetmeats prepared with Sugar and Honey, Pulſe, farinaceous Subſtances, and others of the ſame Kind; which, above other Subſtances, contain in them the hurtful Eggs of Animals; without which there can be no Generation of Animalcules in Nature. This is ſufficiently proved by the Experiments of *Redi* and *Malpighi*; who, in the middle of Summer, put Things ſubject to Corruption, ſuch as Fiſhes and Fleſhes, into different Veſſels, one of which was cloſe ſhut, and the other left open: In a ſhort time they found the Subſtances left in the Veſſel, to which the Flies and Inſects had free Acceſs, full of Worms; whereas, in the Veſſel which was ſhut, they found not ſo much as one Worm. *Malpighi*, alſo, informs us, that tho' he frequently buried Pieces of Fleſh under the Ground, and ſuffered them to remain there for a long time, yet he never found Animalcules in them. Now if it is ſo, the Reaſon ſeems plain, why Infants, living upon Milk alone, are not afflicted with Worms till they begin to eat other Aliments contaminated by the Seeds and Eggs of Animals and Inſects.

The Symptoms, as we have already obſerved, differ, according to the Vigor or Tenderneſs of the Patients, and according to the different Nature of the corrupted Matter, and the Worms. I have, however, often obſerved, that if exanthematous Fevers, Purples, Meaſles, or Small Pox, are accompanied with Worms, theſe Animals not only generally diſturb the calm and regular Progreſs of ſuch Diſorders, but, alſo, induce a Coldneſs of the Extremities, a Weakneſs and Inequality of the Pulſe, Deliquiums, and, often, Death. But

this happens more frequently in Children than in Adults and young Persons. Round Worms, of a variegated Colour, are almost always a bad Sign; for they often ascend to the Stomach, and, by lancinating its Orifices, and sometimes perforating it, produce epileptic Fits, Danger of Suffocation, and even sudden Death. The *Teniæ*, or long Worms, produce chronical Disorders, and sometimes prove mortal, before it is discovered that the Patient is afflicted with them. The *Ascarides* are less dangerous; because, being lodged in the large Intestines, which are not possessed of such a quick Sense as the others, they do less Harm by their Corrosion. The Symptoms of Patients afflicted with Worms are observed to be increased about Noon, and towards the Evening; because, at these times, the Worms more strongly corrode and bite the nervous Canal of the Intestines, which they find free from Aliments. If dead Worms are evacuated by Stool, they portend Danger, on account of the Putrefaction they discover; but it is otherwise, if they are killed and expelled by Medicines. In violent Disorders, Worms coming from the Mouth indicate that the Patient will die, especially if his Breathing is frequent and cold: Nor do they absolutely predict the Death of the Patient; because there are various Examples of Fevers of all Kinds terminated by the Expulsion of Worms. Thus in *M. N. C. Vol. 3. in Append. Obs.* 4. we are informed, that a tertian and continual Fever were cured by a Discharge of many Worms from the Mouth.

The Cure.

Tho' Infants afflicted with Worms are in great Danger, yet we are never to despair, provided Remedies proportioned to the Diversity of Symptoms, Constitutions, and Circumstances, are exhibited seasonably, and in a proper Order. But in scarce any Disease are so different and active Medicines extolled, and used by Physicians, as in Disorders where Worms are to be expelled, or killed; for which Reason, I shall briefly shew what Caution, Prudence, and Circumspection, the Physician ought to use in exhibiting them.

First, then, among the Anthelminthics are generally reckon'd Acids; such as the Juices of Citrons, Oranges, Lemons, Currants, Barberries, and Pomgranates, Phlegm and Spirit of Vitriol, Cream of Tartar, Wine, especially tartish Rhenish Wine, and Vinegar: All these may be commodiously exhibited, where Heat, preternatural Warmth, and febrile Commotions, are complicated; for they not only correct the Heat, but, also, excellently resist the Putrefaction, and avert the dangerous Malignity of the Symptoms.

Among the Anthelminthics are, also, reckoned Bitters; such as Wormwood, the lesser Centaury, Scordium, Marsh Trefoil, Rue, and still more, Bitters possessed of a purgative Quality; such as Aloes, Rhubarb, Coloquintida, and the Troches of Alhandal prepared of it. Tho' these Medicines are not absolutely destructive of Worms, since Animals are not only generated in Rhubarb and Wormwood, but, also, according to *Hildanus*, *Cent.* 1. *Obs.* 160. in the Gall-bladder; yet it cannot be denied, that Bitters are very effectual against these Animals; because, by their balsamic Quality, they partly correct the crude and viscid Matter with which they are nourish'd; and, by stimulating the Fibres of the Intestines, they sometimes evacuate the corrupted Humours, together with the Worms: They, also, partly correct the Inactivity of the Bile, which, in Children, and moist Patients, is frequently the immediate Cause of Worms.

Among Anthelminthics, great Efficacy is ascribed to oleous Substances, which seems to be confirmed by an Experiment of *Rhedi*; who tells us, that Flies, and other Insects, remained alive after they were immersed in various Liquors; but that such as were immersed in Oil died, and did not recover Life, tho' they were exposed to the Solar Rays. I willingly grant, that all this is consonant to Truth; and that oleous Substances, such as Olive-oil, Rape-oil, and Oil of sweet Almonds, may, with great Success, be exhibited. But it is to be observed, that they are by no means to be exhibited with an Intention to kill the Worms; since a very large Quantity of Oil would be requisite, to reach all the Worms in the whole Volume of the Intestines. Oleous Substances, therefore, are much rather to be exhibited in violent Symptoms arising from Worms; because they relax the spasmodically-constricted Coats of the Intestines, and, as it were, defend and line them with a Mucilage, that afterwards more acrid and purgative Medicines may be exhibited with more Safety. Thus, in order to kill Worms, and mitigate the Symptoms, I have, with Success, in Children, prescribed two or three Spoonfuls, or even an Ounce or two, of the Oil of sweet Almonds, to be taken at Bed-time, or early in the Morning, exhibiting, a few Hours after, Pills prepared of the *Extractum Panchymagogum Crollii*, Resin of Jalap, and *Mercurius Dulcis*.

Saline Substances are greatly celebrated as Anthelminthics, both because they are fatal to the tender Structure of these Animals, and because by stimulating the Intestines, they promote their Discharge, especially if dissolved in a sufficient Quantity of Water. This principally holds with respect to the neutral bitter Salts, especially that of *Glauber*, *Epsom*, *Sedlitz*, *Egra*, and the *Caroline* Salt, which when taken in a proper Vehicle, and used for a considerable time, produce an excellent Effect, especially if Children and young Persons labour under that Species of Worms they call *Teniæ*, and the *broad Kind*, because these are not so happily exterminated by Purgatives, which produce Spasms, as by Salts, and saline Springs. Hence the *Sedlitz* Waters, which abound with bitter Salt, are justly extolled for killing Worms. And the same anthelminthic Virtue is ascribed to the saline Springs at *Hall*, by the common People, who now-and-then give their Children large Draughts of that Water against Worms. Nor can we condemn the Practice of the People on the Sea-coast, who, for the same Purpose, drink Sea-water, or, if they are rich, the Broth of recent Oysters, with the Addition of Lemon-juice and Pepper, by which means they expel the Worms, and prevent a Consumption, and various other Disorders incident to Children. It is certain, that Salts, especially of the vitriolic Kind, have long been justly celebrated as Anthelminthics; and the *Pyrmont* Waters, which partake of a subtile Vitriol of *Mars*, are so effectual for the Cure of *Teniæ*, and turbinated or spiral Worms, that the Patients are in a short time totally freed from all the Symptoms.

If any Disorder admits of Specifics, these are certainly required in killing and eliminating Worms. For these Purposes then, the best Specifics are, among Gums, Asa-fœtida, Sagapenum, Opopanax, and Myrrh. Among Herbs, Tansey, Scordium, and Wormwood. Among bulbous Roots, the various Kinds of Onions, and Garlick. Among Fruits, bitter Almonds, and their expressed Oil. Wormseed, the Seeds of the Caiputia, and others of a like Nature. All which by their sulphureous and fetid Smell, are so peculiarly hurtful to Worms as to kill them. And these Specifics are so necessary, that unless they are, in a due Dose, mixed with the above-mentioned Medicines, the desired Effect is rarely produced.

There still remains another not less efficacious Specific taken from the Mineral Kingdom, which is Quicksilver; which being in a peculiar manner fatal to Worms, destroys their vital Motion, tho' the Method in which it produces this Effect, cannot be accurately deduced from mechanical Principles. There have already been various Methods of exhibiting this Anthelminthic, which we shall briefly consider. *Helmont* was the first who made an Experiment with this Medicine, whilst he boiled it either in pure Water, or some distilled Water, and with great Success gave the Water thus impregnated with the subtile Particles of the Mercury, to Patients afflicted with Worms. *Henricus Meibomius* followed another Method; for he let *Rhenish* Wine, poured upon Quicksilver, stand in a gentle Digestion without any boiling, for twenty-four Hours, and he found his Medicine produce more speedy Effects than the former. The Chymists rather approve of *Mercurius Dulcis* duly prepared: A few Grains of which, according to the State of the Patient, they exhibit with some Purgative, such as sulphurated Scammony, Resin of Jalap, and the *Extractum Panchymagogum Crollii*, made up in the Form of Pills; and this Method they have found attended with Success; or they exhibited it mixed with Coralline, either with or without a Purgative. Others, as *Harris*, falling on a safer Method, successfully exhibited Æthiops Mineral, prepared of an accurate Mixture of Sulphur and Quicksilver. But I intimately mix in a Mortar the well depurated Quicksilver with Sugar-candy, and premising the things requisite, I have found, that under a good Regimen, this Preparation was far more efficacious than any others, especially if the Patients, in order to prevent a Relapse, abstain from Flesh, Fish, Milk-meats, sweet Substances, Cheese, and other hurtful Aliments, and use for Drink a Decoction of pure Water, and calcined Hartshorn.

Among other Medicines I have with Success used the following Pills against Worms:

> Take of Asa-fœtida, Extract of Rhubarb, Tansy, depurated Aloes, the best Myrrh, and *Mercurius Dulcis*, each one Scruple; and of the Extracts of Saffron, and Castor, each four Grains; reduce to a Mass: From every Scruple of which make fifteen Pills: By taking five, six, or eight of which, according to the Age, and other Circumstances of the Patient, I have known many throughly cured, though before they were miserably tormented.

They who abhor Pills, may have them exhibited in a Syrup, or twice a Day a proper Dose of the following Medicine may be exhibited:

Take

Take of the Liquor of the *Terra foliata Tartari*, one Ounce; and of the Extracts of Rhubarb, Tanſey, and Wormwood, each half a Dram: Mix all together.

Nor have I ſeen leſs happy Effects produced by the following Powder:

Take of recent white Mechoacan, Wormſeed, Coralline, Rhubarb, *Mercurius Dulcis*, Scordium, calcined Hartſhorn, and purified Nitre, each half a Dram; and of Camphire, ſix Grains: Make into a Powder, which is to be diſtributed into Doſes, according to the Age of the Patient; or reduce it to an Electuary.

But it is to be obſerved, that acrid Purgatives, or hot Remedies, are never to be uſed where there is a febrile Heat, unleſs we intend to augment it. We are, alſo, to abſtain from Mercurials, and all draſtic Medicines, when the Duodenum is full of a cauſtic and acrid Bile; for by theſe means I have not only known the Symptoms augmented, but, alſo, Inflammations of the Inteſtines brought on.

Before expelling the Worms from the ſmall Inteſtines, by Purgatives and Specifics, it is expedient to inject a Clyſter of Milk and Honey, that the Worms, being allured by the Sweetneſs, may quit their Lodgings, and deſcend more eaſily to the ſmall Inteſtines.

If Aſcarides are lodged in the Rectum, detergent milky Clyſters, in which Tanſey, Garlick, or the Leaves of Scordium, have been boiled, produce an excellent Effect; as do, alſo, the Clyſters of Brine, prepared by boiling in it Horehound, the Leſſer Centaury, and Scordium, adding to it a ſufficient Quantity of the compound Electuary of Hiera.

Emetics are, alſo, proper, if, after Purging, the Worms are not duly evacuated, becauſe if they are lodged in the Inteſtinum Cæcum, the Purge cannot always reach them.

Anthelminthics are, alſo, commodiouſly exhibited in Electuaries or Syrups, ſuch as that of Succory with Rhubarb. This is ſufficiently known to Nurſes, who to Children afflicted with Worm, give about a Scruple of Wormſeed mixed with Honey in Milk, before the Changes of the growing or decreaſing Moon. Nor is this Practice without Succeſs, provided the Wormſeed is not rotten.

Sometimes Topics may be uſefully joined with internal Medicines: The beſt Topics are, Epithems prepared of Wormwood, Bulls-galls, Aloes, Coloquintida, the Juice of the Leſſer Centaury, and Oil of the Flowers of Spike, and applied to the epigaſtric and umbilical Regions. The Ointment of Sow-bread, alſo, anſwers the ſame End.

But the Phyſician ought, above all things, to be certain of the Preſence of Worms by infallible Signs, if he intends to exhibit Medicines for killing and evacuating them, leſt the Patient labouring, perhaps, under another Diſeaſe, ariſing from a different Cauſe, ſhould receive more Harm than Good, from his Preſcriptions. *F. Hoffman.*

VERMICATA, a Word uſed by ſome, who mean by it the ſame as *Lentigines.*

VERMICELLI, *Vermicelli, Tagliarini, Milleſanti*; in *French, Vermichel.*

It is a Paſte made with the fineſt Flour and Water, and reduced into Threads of the Figure of Worms, by means of Syringes bored full of ſmall Holes. Theſe Threads, or Filaments, are afterwards dry'd and kept; they are generally white, tho' they are, alſo, prepared of a yellow Colour, by mixing Saffron, or Yolks of Eggs, in the Paſte; ſometimes they add Sugar, to make them the more agreeable. This Compoſition is principally prepared in *Italy*, where it is much more in Uſe than in *France*. They eat it in their Soop.

They reduce this Paſte of *Vermicelli* to ſeveral other Forms; for they flatten and widen it to the Thinneſs of a Ribband, two Inches broad. This is what the *Italians* call *Vagne*; they make it into Sticks of the Bigneſs of a Quill, which they call *Macaron*; and into ſmall Grains of the Bigneſs of Muſtard-ſeed, which the *Italians* call *Semoule*, that is to ſay, *fine Flour*; they reduce it, alſo, into the Form of Beads, and this is what the *Italians* call *Patres.*

Vermicelli ought to be choſen new, well dry'd, and of a beautiful Colour; the white is moſt in Uſe. It is a Pectoral, and of a ſweetening, reſtorative, and ſtrengthening Quality.

All the Names of the *Vermicelli* are *Italian*, becauſe this Sort of Paſte was invented in *Italy*; and it takes the Name of *Vermicelli*, that is to ſay, ſmall Worms, becauſe it is reduced into Filaments reſembling thoſe Animals. *Lemery des Drogues.*

VERMICULANS, σκωληκοειδὴς, vermiculating, an Epithet of a ſort of creeping Pulſe.. See PULSUS.

VERMICULARIS. A Name for the *Sedum; minus; teretifolium; album.*

VERMICULARIS CRUSTA. The interior villous, and gyrous, or rugous Coat of the Inteſtines. *Blancard.*

VERMICULATUM. Something in a Plant, which appears red, and glittering like a Roſe.

VERMICULUM. Elixir, Tincture. *Rulandus.*

VERMICULUS. A ſmall Worm.

VERMIFORMIS, σκωληκοειδὴς, Vermiform, or Worm-like, is an Epithet of a Proceſs in the *Cerebellum*, called *Proceſſus vermiformis.* See CEREBRUM.

Vermiformis Appendicula. See APPENDICULA, and COELIA.

VERMIFUGA. The ſame as ANTHELMINTICA; which ſee.

VERMILION, Cinnabar, or Minium. *Rulandus.*

VERMINA, *Verminatio, Verminoſus*, σπάσμος, the Gripes. *Vermina*, in *Feſtus*, are the griping Pains of the Inteſtines: Pain is, alſo, called *Verminatio.* See STROPHOS. *Verminoſus* is properly ſpoken of the Matter in which Worms are generated.

VERMIS *Cerebri.* The Worm of the Brain, that is, the Epidemical *Hungarian* Fever.

VERNACULUS. The ſame as ENDEMIUS; which ſee.

VERNICE. Dry, guttous *Vernix.* *Rulandus.*

VERNIMBOCK. A ſort of Wood, like *Braſil* Wood, uſed in Dying; and ſuſpected to be what we call *Redwood.* It takes its Name from *Fernambuca*, a Town of the *Portugueſe*, in *Braſil*, whence it is exported. *Raii Hiſt. Plant.*

VERNISIUM. The ſame as,

VERNIX, otherwiſe *Sandaraca, Sandarache*, and *Gummi Juniperinum. Vernix*, Varniſh, is, alſo, a Name given to a certain liquid Compoſition, which induces a Cruſt over Wood, which preſerves it from Putrefaction. Thus, a Vernix is prepared of Lacca, Maſtich, Copal, Succinum, either ſimple or mixed, and boiled and diſſolved in Alcohol of Wine, Oil of Turpentine, or Linſeed-oil. *Blancard.*

VERONICA.

The Characters are;

The Leaves, for the moſt part, grow oppoſite by Pairs; the Calyx is monophyllous, quinquefid, and expands in form of a Star. The Flower is monopetalous, generally quadrifid, and expands in a circular Order. When the Flower decays, the Ovary becomes a membranaceous Fruit, divided into two Cells, which are ſhaped like an Heart, and full of Seeds, ſometimes ſmall, ſometimes of a good Largeneſs and Thickneſs.

Boerhaave mentions twenty-ſix Sorts of *Veronica*; which are,

1. Veronica; major; latifolia; erecta. *M. H.* 2. 317. *Ic.* 2.

2. Veronica; màxima; latifolia; erectâ; cœrulea ſpica longiſſima.

3. Veronica; ſpicata; longifolia. *T.* 143. *Lyſimachia, ſpicata; cærulea.* C. B. P. 246. *Pſeudo-lyſimachium, cæruleum.* Dod.

4. Veronica; ſpicata; anguſtifolia. C. B. P. 246.

5. Veronica; ſpicata; anguſtifolia; flore incarnato. *Flor.* 2. 104.

6. Veronica; mas; ſupina; & vulgatiſſima. *C. B. P. Raii Hiſt.* 1. 851. *Synop.* 3. 281. *Boerh. Ind. A.* 224. *Veronica mas, Betonica Pauli.* Offic. *Veronica mas vulgaris ſupina.* Park. Theat. 550. *Veronica vulgatior folio rotundiore.* J. B. 3. 282. *Veronica vera & major.* Ger. 502. Emac. 626.

MALE SPEEDWELL.

This is a low creeping Plant, whoſe Stalks generally lie on the Ground, ſhooting out Fibres at the lower Joints. The Leaves grow by Pairs, on ſhort Foot-ſtalks; they are oval, about an Inch long, hairy, and crenated about the Edges, of a pale-green Colour. The Flowers grow on the upper Part of the Stalks among the Leaves, in ſhort Spikes, each of one ſmall bluiſh purple Leaf, cut into four Parts; to each of which ſucceeds a Seed-veſſel, in Shape of that of Shepherd's-pouch, full of very ſmall Seeds. The Root is a Buſh of Fibres; grows in Woods and ſhady Places, and flowers in *June.* The whole Herb is uſed.

This is reckoned among the vulnerary Plants, both uſed inwardly and outwardly; it is, likewiſe, pectoral, and good for Coughs and Conſumptions; and is helpful againſt the Stone and Strangury, as, alſo, againſt peſtilential Fevers. *Miller's Bot. Off.*

The Leaves of Speedwell are bitter, and give a pretty deep-red Colour to the blue Paper, which gives us Reaſon to believe, that their Salt very much reſembles that of Coral; but that of the Speedwell is charged with a great deal more Acid than the ordinary Salt of Coral, and is joined beſides with a great deal of Sulphur: For,

By the chymical Analyſis, we obtain from this Plant a great deal of Earth, Acid, and Oil.

These Principles render the Speedwell sudorific, vulnerary, detersive, diuretic, and proper to discharge the Lungs of glutinous and purulent Matter. *Tragus* affirms, that in malignant Fevers, two Ounces of the Spirit of Speedwell, mixed with a little Treacle, provoke Sweat copiously. This Spirit is made by distilling Speedwell infused in Wine for some Days.

Take two Ounces and an half of the distilled Water, infuse in it one Dram of the Leaves, and as much of the middle Bark of *Solanum Scandens, sive Dulcamara Pin.* and give it as an excellent Remedy for Ulcers in the Lungs, Stone, and Vapours.

The Syrup and Extract of Speedwell purify the Blood, and are good for cutaneous Diseases; but the affected Parts must be washed at the same time with the Water of Speedwell, in which some Vitriol has been dissolved. The frequent Use of Clysters, made with one Pound of the Decoction of this Plant, an Ounce of Butter, and as much Sugar, are wonderfully praised for the Colic. Some boil Speedwell and Chamomile in Milk, and afterward add some Sugar. Speedwell is used now-a-days after the manner of Tea. It is mixed, also, with the vulnerary Plants in Broths, Potions, and Ptisans. *Martyn's Tournefort.*

Veronica is an excellent Vulnerary and Sudorific; its principal Uses are in Erosions and Obstructions of the Lungs and Spleen, whence it is of extraordinary Service in the Colic, Phthisis, Scabies, Pruritus, Pestilence, and Wounds. Externally it is much celebrated for absterging Wounds, in Hardness of the Spleen, and the Colic. *Schroder.*

Taken inwardly, it is good against the Cough, and other pulmonic Disorders, and against the Pestilence and contagious Diseases; outwardly, it is effectual in Wounds, Ulcers, Itch, and cutaneous Diseases.

A Decoction of *Veronica*, taken in a good large Dose, freed a Woman from a Stone in the Left Kidney, with which she had been afflicted sixteen Years; the Stone was first protruded into the Ureters, through which it was convey'd to the Bladder, whence by the continued Use of the same Decoction, it was at last ejected by the urinary Passage. *Eph. Germ.*

Veronica is of singular Use in Barrenness. A Lady of the first Rank, after seven Years Barrenness, took, by my Advice, the Powder of *Veronica* in the Water of the same, for many Days together, and very soon after conceived. After this, she advised some others, who were thought barren, to use the same Remedy, which had the desired Success upon ten or twelve of them. The Syrup of *Veronica* is an admirable Remedy in Ulcers of the Lungs. *C. Hoffman.*

The most illustrious *Gunthems* had for some Years laboured under an incurable Ulcer of the Legs, attended with periodical Pains, for which he found no better or speedier Help than Linen Cloths dipt in Water of *Veronica*, and applied to the Place; for the Inflammation, and other Symptoms, usually consequent, immediately ceased.

The Herb is, also, very remarkable for its vulnerary Virtue: A Fistula of the Thorax, which had eluded the Force of Bathing, Fomentation, and all other Kinds of Remedies, was at length perfectly healed by the internal Use of the Water of *Veronica* alone. *Eph. Germ.*

The Extract of *Veronica*, mixed with the Extract of Juniper, is a most efficacious Medicine in Obstructions of the Viscera, and pectoral Diseases; I have often try'd it with extraordinary Success. It expels the morbific Matter by Urine; but Laxatives and Aperitives are first to be premised. *D. Tancred Robinson e Fabr. Hildano.*

I must ingenuously confess, says *S. Pauli*, that after I had in vain try'd various Medicines against the crusty Scabies of Children, I have at last, in Imitation of the Example before related, (of *Gunthems*) directed the Parents to apply Linen Cloths dipt in the Water of *Veronica*, and first compressed to prevent their dropping, to the Arms, and Calves of the Legs of the Children, and by that means have perfectly cured them; but I advised, that the Nurse should, at the same time, drink the Decoction of Fumitory boiled in Whey.

Cato had an extraordinary Esteem for this Herb in the Colic, Stone, and the Pestilence itself; and he prefers the mere simple Decoction of *Veronica* far before all other more generous Medicines for the Stone. *S. Pauli.*

The Use of a Clyster, prepared only of a Decoction of *Veronica* and Sugar, is of more Efficacy than any thing taken at the Mouth. In the Decoction, let there be mixed some Fat of a Sheep's Kidney, or some Fat of a Rabbet, or of a Capon, in order to give it a Lubricity; if these are wanting, a little fresh Butter may be added. *Idem.*

I can safely affirm, that many Persons labouring under the tormenting Pain of the Colic, or Stone in the Kidneys, have often received more Benefit and Relief from the Use of a simple Clyster, prepared of Cows Milk, and Sugar, in which, after the Example of *Crato*, I have only boiled *Veronica*, or the Flowers of Chamomile, not the *Roman*, but the common, and more temperate Species, than from those prepared with a greater Apparatus; as, for Instance, with Penyroyal, Origanum, Rue, Calamint; and other Ingredients, which often exagitate the Humours. *Idem.*

7. Veronica; major; fruteſcens; altera. *M. H.* 2. 319. *Chamædrys, ſpuria, major, altera, ſive fruteſcens.* C. B. P. 248. *Teucrium*, IV. Cluſ. H. 349.

8. Veronica; major; fruteſcens; altera; foliis conſtanter & eleganter variegatis.

9. Veronica; minor; virguloſa, ſeu multicaulis; Pannonica. *M. H.* 2. 320. *Chamædrys, ſpuria, minor, latifolia.* C. B. P. 249. *Teucrium* V. Cluſ. H. 350.

10. Veronica; minor; foliis imis rotundioribus. *Tourn. Inſt.* 144. *Boerh. Ind. A.* 225. *Chamædrys ſpuria latifolia.* Offic. J. B. 3. 286. *Chamædrys ſpuria minor rotundifolia.* C. B. P. 249. BASTARD GERMANDER.

Cæſalpinus, *Pena*, and *Lobel*, affirm, that it is excellent to open the Bowels, and cure the Green-ſickneſs: It may be uſed in aperitive Ptiſans and Broths, or after the manner of Tea. *Martyn's Tournefort.*

11. Veronica; maxima; latifolia; ſeu folio Quercus. *M. H.* 2. 322. *Chamædrys, ſpuria, latifolia, major.* C. B. P. 248.

12. Veronica; tenuiſſime laciniata; minor. *M. H.* 2. 321. *Chamædrys, ſpuria, tenuiſſime laciniata.* C. B. P. 248.

13. Veronica; aquatica; major; folio ſubrotundo. See ANAGALLIS AQUATICA.

14. Veronica; aquatica; minor; folio ſubrotundo. *T.* 145. *Anagallis aquatica, minor, folio ſubrotundo.* C. B. P. 252.

15. Veronica; aquatica; major; folio oblongo. *M. H.* 2. 323. *Anagallis, aquatica, major, folio oblongo.* C. B. P. 252. *Berula major.* Tab. Ic. 719.

16. Veronica; aquatica; minor; folio oblongo. *T.* 145. *Anagallis, aquatica, minor, folio oblongo.* C. B. P. 252.

17. Veronica; terreſtris; annua; folio Polygoni: flore albo. *M. H.* 2. 322.

18. Veronica; pratenſis; Serpyllifolia. C. B. P. 247. *M. H.* 2. 319.

19. Veronica; floſculis; caulibus adhæreſcentibus. *M. H.* 2. 322. *Alſine, Veronicæ folio, floſculis caulibus adhæreſcentibus.* C. B. P. 250. *Alyſſon.* Col. Phytob.

20. Veronica; Hederulæ folio. *M. H.* 2. 322. *Alſine, Hederulæ folio.* C. B. P. 250.

21. Veronica; floſculis oblongis pediculis inſidentibus; Chamædryos folio. *M. H.* 2. 322. *Alſine Chamædryfolia, floſculis pediculis oblongis inſidentibus.* C. B. P. 250.

22. Veronica; floſculis oblongis pediculis inſidentibus, Chamædryos foliis alternis. *H. L.* 622.

23. Veronica; cærulea; trifido, aut quinquefido, folio. *Flor.* 2. 105. *Alſine triphyllos cærulea.* C. B. P. 250.

24. Veronica; Virginiana; altiſſima; ſpica multiplici; floribus candidis. *Flor.* 2. 104.

25. Veronica; Chia; folio Cymbalariæ; verna; flore albo, umbilico vireſcente. *T. Cor.* 7.

26. Veronica; Orientalis; minima; foliis laciniatis. *T. Cor.* 7. *H. R. D. Boerh. Ind. alt. Plant.*

Veronica is commended for ſubduing Phlegm, for deterging the firſt Paſſages, for pulmonic Diſeaſes, the Scurvy, Phthiſis, and Stone, being boiled with Liquorice. Infuſed in Water, it impregnates it with the Smell, Taſte, and all the Virtues of the *Chineſe* Tea, and has the ſame Effects. It relaxes with a moderate Aſtriction, whence it is recommended in a Scurvy proceeding from Relaxation; thus it is proper, alſo, in a Piſſing or Spitting of Blood, becauſe it has an aſtringent and ſomewhat of an aromatic Virtue; it heats, dries, ſtrengthens, and reſiſts Putrefaction.

The thirteenth, fourteenth, fifteenth, and ſixteenth Species are ſcarce inferior to any in Virtues; they are very ſucculent and bitteriſh, their expreſſed Juice abſterges and deterges in manner of Soap, and liqueſies, not by its aromatic, but ſaponaceous Quality. Thus it purges Water, and renders the Blood aqueous without Acrimony; and by this means opens, dilutes, and is a Demulcent. Hence it becomes of Service in all Obſtructions, and in all Sorts of Scurvy; and, where-ever Opening is required, without inducing a great Heat. For the ſame Reaſon it affords us an excellent Remedy againſt the Stone and Gravel in the Kidneys, and is of Service in the Jaundice, Stoppages of the Liver, and all inveterate Obſtructions.

This Plant is very penetrating; for, if it be taſted, it penetrates the whole Mouth, as if it were ſet on Fire. It affords not much Salt, but a very copious Humour; and has the Virtue, alſo, of reſolving Humours. The Decoction of the Herb in Whey, daily drank, cures the Scurvy, as we are aſſured by *Engalenus* and *Sennertus*, and reſolves ſcorbutic Humors; it is good, alſo, againſt the Scabies. The Juice drank

or a long time together, is effectual againſt the Gout; for let he Patient take but two or three Ounces every Day for a Month together, and all the morbific Matter will be diſcharged out of the Blood by Urine. The Juice may be preſerved a long time in Winter, if to the Quantity of one Ounce you put four Drops of the Spirit of Sulphur by the Bell. It incides viſcid Phlegm moleſting the Lungs, and is good in Coughs, Colic, Nephritis, Pththiſis, and the Itch; it is excellent in Clyſters for the Colic. The Infuſion of it in Wine is effectual in the Chloroſis; and the Powder, according to *Cæſalpinus*, cures the Dropſy. The Juice cures intermittent Fevers; the diſtilled Water depurates the Eyes; and a Gargariſm, prepared of a Decoction of the Leaves, cures the Quinſey.

Francus has written a whole Book of the Virtues of this Plant. The Uſe of it, after the manner of Tea, is effectual in Obſtructions of the Spleen, Pancreas, and Meſentery; it is of excellent Uſe in the Head-ach and Vertigo, is of Service in the Fluor Albus, and all cutaneous Diſeaſes, as well as a Cancer. I have cured an hundred Diſeaſes with this Plant; for it has the Virtue of diſſolving pituitous, viſcous, oleous, and almoſt all other Kinds of Humours. *Hiſt. Plant. adſcript. Boerhaav.*

An Infuſion of *Veronica* is recommended by *Heiſter* to be uſed warm, as a Reſolvent in an *Epiphora*, or *Oculus Lacrymans*; he obſerves further, in his Note at the Bottom of the Page, that this Infuſion of *Veronica* is highly commended by *Schobinger*, a Diſciple of M. *St. Yves*, for an incipient *Fiſtula Lacrymalis*, in his Treatiſe *de Fiſt. Lacr.*

Beſides the foregoing Sorts of *Veronica*, *Dale* mentions the following;

CHAMÆDRYS SPURIA ANGUSTIFOLIA. Offic. J. B. 3. 285. Raii Hiſt. 1. 847. *Chamædrys ſpuria major anguſtifolia.* C. B. Pin. 249. *Veronica ſupina.* Ger. 503. Emac. 628. *Veronica Teucrii facie.* Park. Theat. 551. *Veronica ſupina facie Teucrii, pratenſis.* Tourn. Inſt. 144. GERMANDER-SPEEDWELL.

It grows in the Gardens of Botaniſts, and flowers in *June*. The Herb is in Uſe; it agrees in Virtues with the *Veronica*; *mas*; *ſupina*; & *vulgatiſſima*; or male Speedwell. An Infuſion of its Leaves, is called the *Europee*. *Dale.*

VERONICA AQUATICA FOLIO SUBROTUNDO. See SAMOLUS VALERANDI.

VERONICA FOEMINA. A Name for the *Linaria*; *hirſuto folio, ſubrotundo*; *flore ex herbido flaveſcente.*

VERRES. A Male Swine. *Verres ſylvaticus*, the ſame as APER, a wild Boar.

VERRICULARIS, *ἀμφιβλεστροειδής*, a Coat of the Eye ſo called. See AMPHIBLESTROIDES, and OCULUS.

VERRISTA, a Name given by *Paracelſus*, to what he calls his *Summum Arcanum*, in Conjunction with his *Granagrana*, in the Cure of an Epilepſy; but he no-where tells us what they are. *Tract. de Caduc. Matric.*

VERRUCA. A Wart.

A Wart begins in the *Cutis*, and ſeems to be either an Effloreſcence of the Serum of the Blood, which hardening in the Surface of the Skin, makes a dry Tumor, or elſe ſome ſmall Luxuriancy of the little Arteries of the *Cutis*, which thruſt out themſelves, making a petty Sarcoma, which we call a *ſoft Wart*. According to the Variety of the Tumor, it is ſometimes whole with a ſmooth Surface, ſometimes chapt and uneven. According to the manner of their Production, ſometimes they ariſe by a general Exſudation out of the *Cutis*, with a broad Baſis, and are called *Verrucæ ſeſſiles*; ſometimes a few Capillaries putting out together do, after they have grown to a ſmall Length, enlarge themſelves into a greater Compaſs, and make the penſile Tumor we call *Acrochordon.*

There need no Signs to be given of Warts, they being ſo apparent.

Warts often fall away of themſelves.

The Medicines commended in the Cure of Warts are many. Thoſe which are moſt eaſy to be had in the Country are, the green Rinds of Willows beaten, the Juice of Marigolds, Celandine, all the Spurges, a Garden-ſnail ſprinkled with Salt. If you rub them with any of theſe, they will fall off. Oil of Vitriol, or of Sulphur, will certainly deſtroy them. I have ſeen ſome burn them out, by running an hot Needle into the Roots of them. There are other ways, as by rubbing them with raw Beef, and burying it. But when any great one falls into my Hands, I make a ſpeedier Riddance of it by Ligature, or Cauſtic. Where it is capable of being tied, I make a Ligature; in others, where it is not, the Cauſtic-ſtone alone will do it.

A young Lady, having been long vexed with an unſeemly overgrown Wart upon one of her fore Fingers, deſired my Help. I rubbed the chapt Head of it with a Cauſtic-ſtone, till it was ſoft and black; then ſcraped it off, and rubbed the remaining Root with ſome of the ſame, till I judged it was eradicated; then waſhed out the Salts, and dreſſed it with *Unguentum Baſilicon*, with a few Drops of Oil of Turpentine, which made, Separation of the Eſchar, and cured it.

In another young Perſon, where they were ſmall in the Baſis, I tied ſome of them cloſe by the Roots with a Silk; others I ſnipt off with a Pair of Sciſſars, not regarding the Dropping of the Blood upon the neighbouring Parts, which is thought to infect them, and beget others. Then I rubbed the Roots of them all with a Cauſtic-ſtone, and digeſted the Sloughs out as aboveſaid, and they cicatrized of themſelves.

Yet you ought to be cautious how you meddle with thoſe growing upon the Knuckles; for Warts there, being, for the moſt part, near the Tendons, cannot well be extirpated without offending them; and ſo are conſequently ſubject to Fluxions, and to corrupt the Cartilages, or Bone.

This was the Caſe of a Lady of Quality, aged about fifty Years, of a plethoric Body, who had a Wart upon the firſt Joint of one of her fore Fingers. It was imprudently undertaken by ſome Pretender to Surgery, and treated as ill; ſo that, after many Months Endeavours, he was diſmiſſed, and a more knowing Surgeon entertained, who found much Difficulty in the Cure, yet made ſhift to cicatrize it; but it ſwelled again, and diſcharged Part of its Matter by the Side of that Nail. Upon Sight whereof I was conſulted, and ſaw a thin Ichor weeping through the old Cicatrix, at an Opening not bigger than a ſmall Pin-hole. The Lady importuning me to undertake the Cure, I ſprinkled the Orifice with Precipitate, whereby I cruſted in the Matter to thin the Skin, which the next Day I opened, and, by Search of a Probe, felt the Cartilages rotted. I informed the Patient of the Neceſſity of making an Inciſion proportionably large, in order to the Exfoliation, and withal repreſented the Difficulty; and, offered to her Conſideration, the more certain and ſpeedy way, by cutting off that Joint. She with little Demur conſented to it. All things being immediately prepared, I chopt off that Joint, dreſſed it up with Pulvis *Galeni*, and afterwards digeſted it, and cured it, as hath been ſhewed in ſuch like Extirpations. *Wiſeman's Surgery.*

Warts are known to be ſmall browniſh Excreſcences in the Skin, and are incident to moſt Parts of the Body; but moſt frequently affect the Face and Hands. In their Shape and Size there is a ſurpriſing Variety; ſome are large and depreſſed, others ſlender; ſome again reſemble the Figure of a Pear hanging by its Stem. And, indeed, it is not ſo much on account of any Pain or Danger from them, that they are uſually extirpated, as becauſe they are a kind of Deformity and Deſœdation; and moſt remarkably ſo, when conſpicuous on the Face, Neck, and Hands, of fair and fine Women. And here, tho' there are various Kinds of Remedies, ſome ſympathetic, and others ſuperſtitious and inſignificant, which are uſed by Women, and even by ſome profeſſing Medicine, for the Removal of *Warts*; yet, after all, the moſt expeditious Cure is to be expected from the Hands of the Surgeon.

We, therefore, think it moſt proper briefly to deſcribe the principal Means, which Surgery employs in extirpating this Kind of cutaneous Deſœdation. And the Method, which deſerves to be firſt mentioned is, by *Ligature*, or *Vinčture*; this is performed upon ſuch of theſe Excreſcences as are ſlender about the Root, and, in a manner, pendent; by firmly tying about them an Horſe's Hair, or a Silken or Linen Thread. The *Warts* being deprived of the Juices which nouriſh them, through a Conſtriction of the Veſſels by the Ligature, gradually wither and fall away.

Another Method of Cure is, by the Surgeon's Inſtrument, in which the *Wart* is taken up with an Hook, or Forceps, and then very nicely ſeparated with the Sciſſars. The Wound is treated for ſome time with an Application of the *Lapis infernalis*, or ſome other corroding Medicine, that if any Part of a Root ſhould remain, from which a new Tubercle might ariſe, it might be conſumed and deſtroyed.

If the *Warts* are of a larger than ordinary Size, recourſe muſt be had to Corroſives. And, that theſe Medicines may the ſooner work their Effect, and conſume the prominent Part, it will be convenient, firſt, to cut off the hard Top of the Tubercle with a Penknife, Razor, or a ſharp Pair of Sciſſars; which done, the Wound is to be every now-and-then treated with Applications of Oil of Tartar *per Deliquium*, or ſome acid Spirit, of which the mildeſt is Spirit of Salt. If theſe prove too weak for the Purpoſe, it will be proper to ſubſtitute ſome ſtronger Medicine in their room; for Inſtance, Spirit, or Oil of Vitriol, Aqua-fortis, or Butter of Antimony. On the other hand, the ſofter and tenderer Sorts of *Warts* are ſometimes removed only by often rubbing them with the yellow Juice of the Chelidonium majus, or the Milk of the Eſula. But, by way of Caution, the greateſt Circumſpection is required in the Uſe of Corroſives about the Eyelids or Eyes, that nothing thereof may enter the Eye, and by that means induce Blindneſs;

Blindneſs: Care, alſo, is to be taken, that the Parts adjacent to the Tubercle be not injured by the Corroſive. For this End it will be convenient enough to ſurround the *Wart* with a waxen Ring, or a perforated Plaiſter, in which the *Wart* may appear as an Eminence, and thus be corroded with Safety to the covered Parts. The Corroſive may be applied ſeveral times in a Day; and, by the ſame Method, other Tubercles, and the like Kinds of cutaneous Deſedations, may be removed.

A fourth Method of extirpating *Warts* is, by the Application of a red-hot Iron adapted to the Size of the Tubercle, in ſuch a manner, as to penetrate to the very Bottom of its Root. If there be any other violent Means of extirpating *Warts*, certainly there can be nothing more violent than red-hot Iron, which, tho' it excites indeed a very acute Pain, yet the ſame is but for a Moment. To the cauterized Place muſt be applied ſome Portion of Baſilicum, or digeſtive Ointment, and over that a cooling Plaiſter; ſuch as, for Inſtance, the *Emplaſtrum de Spermate Ranarum*. It can hardly be expreſſed how happily this Method of Cure ſucceeds in moſt Parts of the Body, except the Eyes; for theſe Excreſcences, thus removed, are ſure never to return.

There is a fifth Method, which is peculiar to Stage-quacks, and conſiſts in, firſt, well rubbing and chafing the Tubercle with ſome emollient Ointment, and afterwards taking it between the Nails of the Thumb and fore Finger, and with great Violence pulling or tearing it off. But as this way of Cure is very troubleſome, ſo it has been found in many Caſes to be quite uſeleſs. For this Method, by Avulſion, thus practiſed by theſe Strollers, ſeldom ſucceeds ſo well, but that the *Wart* pullulates afreſh, and grows again out of the Place affected, as from a Root left behind.

In the laſt place, it ought not wholly to be omitted, that ſometimes may be obſerved, eſpecially in the Face, on the Lips, and near the Eyes, a kind of livid and bluiſh *Warts*, which in their Tendency, are next to a Carcinoma, or Cancer; for which Reaſon it is much ſafer to let them alone, than endeavour their Extirpation. For no ſooner are they irritated by the Hand of the Surgeon, than they degenerate into a Carcinoma; and, after an Erolion of the Face and Eyes, in a miſerable manner deſtroy the Patient. *Heiſter Chirurg.*

Of WARTS, *and other Tubercles of that Kind, growing on the* PENIS.

Tubercles, of what Kind ſoever, infeſting the Penis, are almoſt conſtantly the Product of ſome Venereal Diſtemper: Their Seat is not always in one Place, but ſometimes in the Prepuce, ſometimes in the Corona Glandis, and ſometimes in the Glans itſelf. Many of them appear like fungous or ſpongy Fleſh, increaſe very faſt, and now-and-then excite Pains. Remedies beſt adapted to their Extirpation are gentle Corroſives, ſuch as Powder of Savine, either by itſelf, or mixed with red Precipitate, and burnt Alum, and twice or thrice ſprinkled on the Parts, or worked up with Unguentum Baſilicum, or Mundificativum, and then applied. If the Tubercles are harder than ordinary, there ſeems to be no better Way than gently touching or rubbing them with the Lapis Infernalis, till they quite diſappear. If the Root of the prominent Part be but ſlender, it will be convenient to uſe the Sciſſars, or a Ligature, in the manner as was directed for the Extirpation of Warts, and all other Kinds of Tubercles. But if the Tubercles will not conveniently admit of a Ligature, on account of the Wideneſs of their Root or Baſe, and their Extremity be remarkably hard, the prominent Parts are to be all cut off with the Sciſſars, and after ſuffering the Blood to flow for ſome time, the Wound is to be cleanſed and fomented with warm Wine; and the Root is to be every Day rubbed with the Lapis Infernalis, till it appears to be quite extirpated. *Sculletus* indeed is ſaid, *Obſ.* 65. to have uſed a red-hot Iron in the Extirpation of theſe Kinds of Tubercles of the Penis. And *Fabricius ab Aquapendente*, and ſome others, adviſe the ſame: But to me this Method of Cure ſeems too cruel. We are not, however, to omit this one neceſſary Obſervation, that not external Means only, but internal Medicines, and theſe in the firſt and principal Place, are to be employed, in order to expel the virulent Venereal Matter; for otherwiſe, by what outward Means ſoever the Tubercles are removed, they generally return in a ſhort Time. *Heiſter. Chirurg.*

VERRUCARIA. A Name for the HELIOTROPIUM, becauſe it removes Warts; and, alſo, for a Species of TITHYMALUS, by whoſe lacteous Juice Warts are extirpated. *Blancard.*

VERSIO *Chymica* is a Change wrought by Chymiſtry, of manifeſt Forms into occult ones, which is done by a Corruption of the ſpecific Form, and the Generation of a more general one, that is, by a Converſion of decompounded Elements into compounded ones; and of impure into pure. *Theat. Chym. Vol. I.*

VERTEBRÆ, Σπόνδυλοι. The Vertebræ.

VERTEBRALES MUSCULI. The Vertebral Muſcles, that is, the Muſcles which aſſiſt in moving the *Vertebræ*. Among theſe are reckoned the *Longus Colli*, *Tranſverſalis Colli major*, *Tranſverſalis Gracilis ſive Collateralis Colli*, *Semi-ſpinalis ſive Tranſverſo-ſpinales Colli*, *Spinales Colli parvi ſive Inter-ſpinales*, *Tranſverſales Colli minores ſive Inter-tranſverſales*, *Obliquus major*, *Rectus minor*, *Sacro-lumbaris*, *Longiſſimus Dorſi*, *Spinalis Dorſi major*, *Spinales Dorſi minores*, *Tranſverſalis Dorſi major*, *Tranſverſales Dorſi minores*, *Semi-ſpinalis ſive Tranſverſo-ſpinalis Dorſi*, *Semi-ſpinalis ſive Tranſverſo-ſpinalis Lumborum*, *Sacer Veterum*, *Spinales & Tranſverſales Lumborum*, *Quadratus Lumborum ſive Lumbaris externus*, and the *Coccygæi*; which ſee, under the reſpective Articles of their Names.

VERTEX. See CORYPHE.

VERTIBULUM, from *verto*, to turn, is the round or globous Head of a Bone, which, in Articulation, is inſerted into the Sinus, or Cavity, of another Bone adapted to it.

VERTICELLI *marini*, Σπόνδυλοι θαλάττιοι, are tuberous Zoophytes, which are, alſo, called *Vertibula*, and *Tethyia*.

VERTICILLUM, in *Botany*, is the Whorle, or Circle of Flowers or Leaves, which ſurrounds the Stalks or Branches of Plants, ſo called from its Reſemblance to the *Verticillum*, or Whorle of a Spindle. See the Article BOTANY.

VERTICILLUM and VERTICULUM, are, alſo, Names for the Vertebræ.

VERTICILLUM ANI, in *M. Aurel. Severinus*, is a Tubercle on the Extremity of the Anus, reſembling the *Verticillum*, or Whorle on a Spindle. *Caſtellus.*

VERTIGO, Ἴλιγξ, the Vertigo, is a Diſeaſe in which the Head ſeems to turn round. When a Miſt, alſo, ſeems to be caſt before the Eyes, it is called *Scotidinos*, Σκοτίδινος, or *Scotedinos*, Σκοτόδινος. *Galen*, *Com.* 4. *in Lib. de R. V. I. A.* *Erotian* expounds Ἴλιγξ, by Σκότωσις, ὡς φέρεσθαι δοκεῖν τὰ ὁρώμενα, "An Obtenebration, in ſuch a manner that Objects "ſeem to turn round." The Cauſe of this Affection is, by *Galen*, in the forecited Place, aſcribed to a diſorderly Motion of the Spirits, which are generated and reſide in the Brain; or of thoſe which aſcend thither from the lower Parts. *Caſtellus.*

This, according to *Willis*, is a Diſorder in which viſible Objects ſeem continually to turn round, whilſt the Patients are affected with a Perturbation or Confuſion of the animal Spirits in the Brain, which hinders their Influx into the Nerves. Hence it is, that the viſive and locomotive Faculties often fail to ſuch a Degree, that the Patient is ready to drop down, and complains of Darkneſs. *Ettmuller* divides it into three Kinds; the firſt of which is a ſimple Vertigo, in which there is only a tranſient and ſhort-continued Gyration of Objects. The ſecond is a dark Vertigo, or Scotomia, when the Eyes are darkened, or ſo affected, as if ſeveral Colours were before them: And the third is, the Vertigo Caduca, in which the Patient preſently falls down.

A Vertigo may be produced by every Cauſe which can diſtend, preſs, and contract the Arteries; ſuch as ſudden Fear, Surprize, Ebriety, and Voracity, by which the regular Influx and Reflux of the Animal Spirits into the Optic Nerves, and Retina, are prevented. Sometimes, alſo, it may be produced by an Acid, or any other peccant Humour, lodged in the Stomach, and vellicating its Nerves, which communicate with the Retina; for which Reaſon the hypochondriac and hyſteric Paſſions may produce a Vertigo.

With reſpect to the Prognoſtics. If a Vertigo is recent, if it happens ſeldom, and the Patient is young, the Cure is eaſy: But if it is original and confirmed; if it happens frequently, or is apoplectic or epileptic; if it ſeizes old Perſons, and is accompanied with great Dimneſs of Sight, and Inability to ſtand, the Cure is difficult. According to *Ettmuller*, a ſevere and long-continued Vertigo, in old Perſons, foretels an Apoplexy; and in ſuch as are young, an Epilepſy. Sometimes a Vertigo afflicts the fore Part, and at others the back Part of the Head. The former Species is more eaſily cured than the later, which is very dangerous.

With reſpect to the Cure, the Regimen in general ought to be the ſame with that in an Apoplexy, or Epilepſy. If the Patient is plethoric, a due Quantity of Blood is to be taken away; and if a Nauſea, Loſs of Appetite, or any other Diſorder of the Stomach remain, an Emetic is to be preſcribed; then Cathartics and Specifics are to be ordered. According to *Mayerne*, Calamus Aromaticus, in whatever Form, is good for a Vertigo, and eſteemed a Secret for that Diſorder. The ſame Author informs us, that a *German* Phyſician cured a great many of Vertigos, by Pills made of Sugar of Lead, and *Cypreſs* Turpentine; four or five Grains of which were to be taken for a Doſe; and their Uſe perſiſted in for ſome Days. *Gliſſon*, as *Bates* informs us, after all other Medicines had

failed,

failed, was cured of a ſevere Vertigo, of three Weeks Continuance, by ſhaving his Head, and applying to it a Plaiſter, made of the Flowers of Sulphur, and Whites of Eggs. Some order a Cauſtic, or a Seton, to be applied to the back Part of the Neck; a Cautery to the Bregma; and *Bates*'s Epileptic Electuary, or *Fuller*'s *Peruvian* Epileptic Electuary, to be uſed internally. *Willis* informs us, that, after he had in vain tried all other Medicines, he with Succeſs preſcribed the following Powder.

Take of the Powder of the Roots of Male Piony, two Ounces; of the Flowers of Male Piony, one Ounce; of Peacocks Dung, of the whiteſt Kind, half a Pound; and of white Sugar, two Ounces: Reduce to a Powder, the Doſe of which is to be about the Quantity of a Spoonful, twice a Day, drinking after it a Draught of a Decoction of Sage and Roſemary, impregnated with Coffee.

VERTO, in *Dornæus*, *Rulandus*, and *Johnſon*, is the fourth Part of a Pound.

VERVA, in *Scribonius Largus*, N° 16. is the Name of an Amulet of Ivory, to be worn on the Arm for the Epilepſy.

VERUCLA is the ſame as the preceding. *Rhodius, in Scrib. Largum*, N° 16.

VERVEX. A caſtrated Sheep.

VERUTA *Sectio*, ὀβελαῖα διαίρεσις, from *Veru*, ὀβελὸς, a Spit, is a Chirurgical Operation, or Section; ſo called, and directed by *P. Ægineta*, *Lib.* 6. *Cap.* 8. in the Cure of a *Diſtichiaſis*, to be performed with a σμιλίον ἀναῤῥαφικὸν, a Kniſe adapted to Sutures.

VESANIA, according to *Blancard*, is a Species of Madneſs proceeding from Love.

VESANUS, according to *Paracelſus*, *Tract.* 1. *de Morb. Ament. Cap.* 5. is one who has contracted Madneſs from a bad Regimen, or improper Medicines: But *Inſanus*, he ſays, is the proper Denomination of one mad from the Birth; or whoſe Madneſs is hereditary. *Caſtellus.*

VESICA. The Bladder. See CALCULUS, and RENES.

VESICARIA is a Name for the *Alcea Veneta*; and, alſo, for the *Alkekengi*; either becauſe its Fruit and Seed are contain'd in Bladders, or becauſe they are good for the Stone in the Bladder. *Blancard.*

VESICATIO. A Veſication, or raiſing of Veſicles, a Symptom ſucceeding Combuſtions by Fire or Water. The Effects of a veſicatory Remedy are, alſo, called *Veſicatio*. *Caſtellus.*

VESICATORIUM. A Veſicatory. See CANTHARIDES.

VESICULA. A Veſicle, or little Bladder; a Diminutive of *Veſica*; it is often appropriated to the Gall-bladder.

VESICULÆ SEMINALES.

The *Veſiculæ Seminales* are ſoft, whitiſh, knotted Bodies, about three or four Fingers-breadth in Length, one in Breadth, and about three times as broad as thick, ſituated obliquely between the *Rectum* and lower part of the Bladder, in ſuch a manner, as that their ſuperior Extremities are at a Diſtance from each other, and their lower Extremities united between thoſe of the *Vaſa Deferentia*; of which they imitate both the Obliquity and the Incurvation.

They are irregularly round on the upper Part, and their Breadth decreaſes gradually from thence. By the Union of their lower Extremities they form a kind of Fork, the Branches of which are broad, and bent like Rams Horns: Theſe Extremities are very narrow, and form a ſmall Neck, which runs behind the Bladder, toward its Orifice, and continues its Courſe in the Groove of the *Proſtates*, through the Subſtance of the contiguous Portion of the Urethra, till its Extremities pierce the *Caruncula*.

The inner Subſtance of the *Veſiculæ* is plaited, and in a manner diſtinguiſhed into ſeveral *Capſulæ*, by contorted Folds: Their external Surface is covered by a fine Membrane, which ſerves for a Border and Frænum to the Folds, and is a true Continuation of the Cellular Subſtance of the *Peritonæum*. The *Veſiculæ* may eaſily be unfolded, and all their Contorſions ſtraitened; and, by this means, they become much longer than in their natural State.

Their inner Surface is villous and glandular, and continually furniſhes a particular Fluid, which exalts, refines, and perfects the Semen, which they receive from the *Vaſa Deferentia*, and of which they are the Reſervatories for a certain time. *Winſlow's Anatomy.*

VESPA. Offic. Mer. Pin. 196. Raii Inſect. 250. Jonſ. de Inſect. 17. Aldrov. de Inſect. 198. Mouff. Inſect. 41. Charlt. Exer. 37. THE WASP.

The whole Inſect is uſed, and is ſuppoſed to open Obſtructions of the Kidneys and Bladder, to break the Stone; and is thought by ſome to agree in Virtues with the *Aſellus*, or Woodlouſe. *Dale.*

VESPA ICHNEUMON.

This is a Fly, with a ſlender Body, four Wings, and arm'd with a Sting.

It has been obſerved of the *Grana Radicum Breynii*, or the *Coccus Polonicus*, [ſee the Article KNAWEL]; and of the *Grana Kermes*, or *Coccus Baphicus* Offic. [See CHERMES]; that they are Neſts of Inſects, and not generated of the Plants in which they are found. But ſince we omitted, under thoſe Articles, to inform the Reader to what Tribe of Inſects they ought to be reduced, it is here thought proper to obſerve, that both of them ariſe from Eggs depoſited, by the Parent Inſect, in a Wound they make in the Plant, ſo as to raiſe a Tumor: From this Tumor, maturated by the Heat of the Sun, ariſe Inſects with ſix Legs, which are, by degrees, metamorphoſed into Waſps, called *Ichneumones*. This I am induced to believe by two Reaſons: The firſt is, that *Breynius* himſelf obſerves, that Animals of this Tribe are found in the Places where theſe Cocci grow. Secondly, The Waſps of this Tribe lay their Eggs not only in the Bark of Trees, and the Roots and Stalks, but in the Bodies of Animals, as appears from a Multitude of Obſervations in Authors, who have written of Inſects. We have an Example in *Goedartius*'s *Metamorphoſis of Inſects*, in the *Eruca Braſicaria*, or Caterpiller, which infeſts Cabbages, where writing of this Sort of Inſects, the Author ſays, that, "After they had lain four Days without Motion, you may "ſee forty or more Worms breaking out of the Skin, on both "Sides of every ſingle Inſect, which afterwards became ſo "many ſmall Flies." *Ray*, in his Hiſtory of *Inſects*, takes notice of the ſame; and I myſelf have made the like Obſervation on the Caterpiller, and other Inſects, which become Neſts not only of *Ichneumon Waſps*, but, alſo, of other Flies.

Some think the Worms hermaphrodite: Of this Opinion was *Cheſton*, becauſe he could never diſcover any Difference of Sex in them, or obſerve them joined in Copulation. The Minuteneſs of the Animalcula might, indeed, be an Hindrance to any Obſervation of thoſe Parts and Actions; whereas, in Earthworms, Houſe-ſnails, and the Limax, which are, alſo, Hermaphodrite, the Manner of their Generation, as being larger Animals, is plain and evident.

Garidellus, in his *Hiſtoire des Plantes qui naiſſent en Provence*, has written largely of the *Coccus Baphicus*, but not ſo accurately as there was Reaſon to expect, from a Perſon who had ſuch Opportunities of making Obſervations. What the very learned *Breynius* has written of the Matter, in his *Hiſt. Nat. Cocci Radic. Tinct.* I ſhall relate in his own Words, obſerving firſt, that the *Coccus Polonicus* is to be ranked with the *Coccus Radicum*; as we are aſſured by *Breynius* himſelf, who, in the Concluſion of his Work, writes thus:

"The *Coccus Radicum* is an Inſect, deſtitute of Wings, "furniſhed with ſix Feet, of no diſtinct Sex, as far as it ap"pears; which, faſtening itſelf to the Tops of the Roots of the "Polygonum, and being deprived of local Motion and Senſe, "under the Appearance of a ſpherical Grain, ſeems to acquire "the Nature of Vegetables, and increaſes in Bulk; out of "which, after a determinate Time, there comes forth another "Worm, or Inſect, different from the former, though reſembling it in many Properties: This Worm receives no "Nouriſhment, nor Increaſe, nor appears of a diſtinct Sex, "but brings Eggs to Perfection within itſelf; and, after a cer"tain Time, is covered with a Down; and, being again de"prived of local Motion, is contracted, and expels its Seeds "or Eggs, from which, after another determinate Time, by "Virtue of the Sun's Heat, are hatched, or produced Worms "like thoſe firſt-mentioned."

Now, though I have not the leaſt Doubt of the Veracity of *Breynius*, and the Truth of his Obſervations, yet, ſince he confeſſes, that Multitudes of the Ichneumon Waſps, are to be found near the Neſts of theſe Animals, I cannot but ſuſpect, that they owe their Original to them. *Garidellus*, alſo, owns that after the Hexaped, or ſix-legged Inſects, periſh, theſe ſmall Flies are produced in the Grains of *Chermes*. *Dale.*

VESPERNA, the fourth Meal, or fourth time of Eating, in a Day, and next after the *Merenda*, or Afternoon's Collation. *Caſtellus.*

VESPERTILIO. Offic. Aldrov. Ornith. 1. 571. Bellondes Oyſe. 147. Geſn. de Avib. 694. Jonſ. de Avib. 34. Charlt. Exer. 80. Raii Synop. A. 243. Sloan. Hiſt. Jam. 2. 330. *Andira*. Piſ. (Ed. 1658.) 290. *Andira acu*. Marcg. 213. *Andhura*. De Laet. Ind. Occid. 615. THE BAT, or FLITTER-MOUSE.

It appears in Summer Evenings; but in the Winter lies hid in Rocks and Caverns. The Fleſh and Blood of this Animal are uſed; the firſt of which, being prepared, is good for a Scirrhus, and the Gout; and the Blood cures an Alopecia. *Dale* from *Galen.*

Ray juſtly obſerves, that this Animal is, by ſome, erroneouſly reckoned among Birds, becauſe of its Wings and Flight, ſince it has neither Feathers nor Beak, nor lays Eggs. *Dale.*

VESTIBULUM. A Part belonging to the Ear, ſo called. See AURIS.

VETERINARIA, κτηνιατρικὴ, is that Part of Medicine which treats of the Diſeaſes incident to Horſes and Cattle.

VETERNUM. The *Anaſarca.* *Junius in Nomenclat.*

VETERNUS. The ſame as LETHARGUS.

VETONICA. The ſame as BETONICA: Betony. It is, alſo, a Name of the *Caryophyllus altilis major.*

VETTADAGOU, H. M. is a low, bacciferous, *Indian* Shrub, bearing a whitiſh, pentapetalous, and ſcentleſs Flower, and a round black-purple Berry, containing five ſolid triangular Seeds, which are firſt white, then reddiſh, and at laſt blackiſh. It is an Evergreen, and bears Fruit twice in the Year, that is, in *March* and *September.*

Of the Leaves bruiſed, and boiled in Oil of Seſamum, is prepared a Liquid, which, applied to the Abdomen, is ſaid to give Relief under difficult Labour; and to expel the Secundines, when retained.

The *Kal Vettadagon*, H. M. very much reſembles the preceding, only its Leaves are leſſer and rounder; the Flowers are red, and the Berries of an Orange-colour, and have an acid Taſte. *Raii Hiſt. Plant.*

VETTI TALI. See AMVETTI.

VEXATA, in the Language of *Celſus*, are Contuſions or Colliſions. Of the Cure of *Vexata* he treats, *Lib.* 7. *Cap.* 1. See CONTUSIO.

UHEBEHASON *Thevetî.* J. B. Arbor Braſſicæ Folio excelſiſſima Americana. C. B.

This is a Tree of ſurpriſing Talneſs, with Branches ſtooping one under another, and Leaves like Cabbage-leaves. The Branches are loaded with Fruit, a Foot in Length. The Tree yields, alſo, a red Gum. When *Thevet* was in *America*, he obſerved this Tree at the Diſtance of ſix Miles, when he looked upon it, he ſays, as ſomething artificial, and not as a natural Product.

Innumerable Multitudes of Bees have their Aliment from the Fruit, and their Neſts in the Holes or Cavities of the Tree, where they raiſe their Combs, and prepare their Honey. He deſcribes two Sorts of theſe Bees; the firſt are of the Size of our ordinary Bees, and make a very good Honey, and a yellow Wax; the other Sort of Bees is leſs by half, and makes a Honey which excels in Goodneſs, but a Wax as black as a Charcoal. The Fruit *Uhebaſo*, though coveted by the Bees, is not eatable by human Creatures, becauſe it is not eaſily brought to Maturity. *Raii Hiſt. Plant.*

VIA. This Word, which imports a Path, or Way, has no peculiar Senſe in Medicine, except that the Stomach, Inteſtines, and their Appendages, are called the *Primæ Viæ.*

VIBEX. A livid, or black Mark, on the Skin, from a Contuſion. It is the ſame as an ECCHYMOSIS.

VIBRISSÆ, or VIBRISCI. The Hairs which grow in the Noſtrils.

VIBURNUM.

The Characters are;

The Flower is monopetalous, rotated, quinquefid, furniſhed with five Stamina, growing on the Inſide of the loweſt Part of the Flower, diſpoſed in Umbellæ, and growing on the Ovary. The Ovary has its upper Margin ſurrounded with a quinquefid Calyx; is furniſhed with an erect, and, in a manner, triglobular Tube, and becomes a ſoft ſucculent Berry, which is compreſſed, ſtriated, and full of a ſingle ſtony Seed.

Boerhaave mentions nine Sorts of *Viburnum*; which are,

1. Viburnum. *Offic. Parkinſon. Theat.* 1448. *Raii Hiſt.* 2. 1590. *Synop.* 3. 460. *Tourn. Inſt.* 407. *Boerh. Ind. a.* 2. 224. *Viburnum vulgo.* C. B. P. 429. *Lantana, ſive Viburnum.* Ger. 1305. Emac. 1490. *Lantana vulgo, aliis Viburnum.* J. B. 1. 557. THE WAYFARING TREE.

Matthiolus, who has given the beſt Figure of this Tree, affirms, that its Leaves are aſtringent, and good to ſtrengthen the Gums; that its Fruit, reduced to Powder, ſtop a Looſeneſs; and that Birdlime is made of its Roots macerated in the Ground, and bruiſed. *Martyn's Tourneſort.*

This is an arboreſcent Shrub, ſometimes pretty large, though rather ſpreading than tall, and conſiſting of a ſungous and medullous Wood. From the Root, cloſe to the Ground, ſhoot ſcattering ſpriggy Branches, an Inch in Thickneſs, and two Cubits, or more, in Length, covered with a reddiſh Baſe, ſprinkled with a farinaceous Powder, and conſiſting of but little Wood, and that green, but of a very large white medullary Subſtance. The Leaves much reſemble thoſe of the *Alnus*, or, rather, of the *Sorbus Alpina*, and are oppoſite, broad, ſomewhat long, and thick, crenated, hairy, and ſprinkled with a white Powder, eſpecially in the lower Part, which, for that Reaſon, is whiter than the reſt, and of an aſtringent Taſte. The Flowers grow in Umbellas, ſmell like Elder-flowers, and are white, caducous, and conſiſting of five Petals moderately reflexed outwards, in the midſt of which ariſe five long whitiſh Stamina. The Flowers are ſucceeded by Berries, which are firſt green, then red, and, when ripe, black, flattiſh, ſweet, and viſcous, and not very grateful, at leaſt, ſays *J. Bauhine*, to my Palate, tho' many in the Country feed on them, and, in order to haſten their Maturity, ſtrew them upon Hey, or Straw, Layer upon Layer, alternately. The Berries contain a broad, compreſs'd, and ſtriated Seed, cover'd with a ſtony Cortex, or Shell.

It grows frequently in Hedges, eſpecially in a clayey and uncultivated Soil; and flowers in the Summer, earlier or later, according to the Weather, and the Temper and Condition of the Soil. The Berries are generally red in *July*, and ripe in the End of *Auguſt*, or Beginning of *September*, as we are told by *J. Bauhine.*

The Leaves and Berries are drying, and aſtringent; whence they are commended for Inflammations of the Tonſils and Throat, the Falling-down of the *Columella*, the Looſening of the Teeth, and Fluxes of the Belly. The Leaves, boiled in a Lixivium, blacken the Hair, and repel an *Alopecia.* Of the Bark of the Roots, macerated under Ground, and now-and-then boiled, and pounded for a long time together, is prepared a Birdlime, which is none of the worſt for Fowling. *Matthiol. Dodon.* We doubt, with *J. Bauhine*, that *Matthiolus* has aſcribed many Things to the *Viburnum*, which belong to the *Rhos*; becauſe he once thought them, with *Ruellius*, the ſame.

Of the ſmall Branches is prepared a very good Water for the Eyes. *Camerarius.*

Our Country People, ſays *Ruellius*, call it *Viurnd*, and uſe it for binding of Faggots, becauſe of its invincible Toughneſs. It is applied to the ſame Uſes where-ever it grows, whence ſkilful Botaniſts take it to be the *Spiræa* of *Theophraſtus.*

It is called *Viburnum à viendo*, "from binding; for *Viburnum* is not a Name given by the Antients to any particular Shrub, but is appropriated, by the Moderns, to the above deſcribed, becauſe of the Flexibility or Pliancy of its Branches; whence it is, alſo, called *Lantana. Hiſt. Plant. adſcript. Boerhaav.*

2. Viburnum, Americanum; odoratum; Urticæ foliis latioribus; ſpinoſum; floribus miniatis. *P. B. Prodr.*

3. Viburnum; Americanum; odoratum; foliis Urticæ; floribus miniatis. *H. L. App.* 698. *Camarâ.* Piſo 177. *& Camara-Tinga.* Id. Ib.

4. Viburnum; Americanum; odoratum; folio parvo, orbiculato; floribus & baccis foliolis interceptis. *C. P. B. Prodr.*

5. Viburnum; Ciſti fœminæ, ſive Salviæ foliis mucronatis; Americanum; odoratum; minus; floribus incarnatis. *P. B. Prodr.*

6. Viburnum; Americanum; Salviæ foliis obtuſis; floribus albis. *P. B. Prodr.*

7. Viburnum; Americanum; Ciſti fœminæ, ſeu Salviæ, foliis mucronatis; floribus luteis. *Par. Bat. Prodr.*

8. Viburnum; Americanum; folio Urticæ latiſſimo; floribus aureis in globum congeſtis. *H. R. D.*

9. Viburnum; Americanum; folio Urticæ; floribus ex aureo & roſeo miſtis. *H. R. D. Boerh. Ind. alt. Plant.*

VICIA.

The Characters are;

The Pod is full of roundiſh, or angulated Seeds; the Leaves are numerous, pinnated, and generally conjugated, by Pairs, to a Rib, which ends in a Tendril.

Boerhaave mentions twenty-two Sorts of *Vicia*, which are;

1. Vicia; ſupina; latiſſima; folio non ſerrato. *T.* 397. *Faba, ſylveſtris, fructu rotundo atro.* C. B. 338. *Bona ſylveſtris.* Dod. p. 516. *Aracus, fabaceus, & Faba kairina, cui ſemina minora.* J. B. 2. 286.

2. Vicia; ſativa vulgaris; ſemine nigro. *C. B. P.* 344. *Tourn. Inſt.* 396. *Boerh. Ind. A.* 2. 43. *Vicia.* Offic. Ger. 1052. Emac. 1227. Raii Hiſt. 1. 900. Synop. 3. 320. *Vicia vulgaris ſativa*, Park. Theat. 1072. J. B. 2. 310. *Aphaca, Vicia*, Chab. 146. COMMON TARE.

The Stalks of Tares are angular, weak, and leaning, beſet alternately at the Joints with long Leaves, having a Tendril at their End, made of ten or a dozen ſmall roundiſh Pinnæ, a little hollowed in with a Spinula at the End: They are ſometimes a little hairy. The Flowers grow uſually two together, upright, and leſs than Pea-bloſſoms, of a purpliſh Colour; after which follow ſmall flattiſh Pods, containing three or four ſmall round black Seeds, leſs than Peaſe. Tares are ſown in the Fields, flowering in *May*, the Seed being ripe in *Auguſt* and *September.*

Tares are rarely uſed in Medicines, though the Vulgar boil them in Milk, and give the Decoction to drive out the Small Pox, and Meaſles. *Miller's Bot. Off.*

Common

Common Tares are heating, drying, cleanſing, abſterſive, and aſtringent: They agree in Virtues with the APHACA, which ſee.

3. Vicia; ſativa; alba. *C. B. P.* 344. *Tourn. Inſt.* 397. *Boerh. Ind. A.* 2. 43. *Vicia alba.* Offic. *Vicia alba ſemine.* J. B. 2. 311. Raii Hiſt. 1. 900. Park. Theat. 1072. WHITE TARE.

This Species is diſtinguiſhed by a remarkable Variety in its Leaves, ſome of which are almoſt round, others long and narrow; the Flower is ſingle or double, with many purple Spots, and growing on a ſhort Pedicle; the Pods, alſo, are different from the common Tare, being full of Seeds, ſometimes nine in a Pod, which are altogether white, or purpliſh, or various, or of a pale green, reſembling, in Shape and Colour, green Peaſe, to which they are equal, alſo, in Bigneſs, but diſtinguiſhed from them in that they are not blackiſh in the Part where they are connected to the Pod, as Peaſe are.

The *Vicia Indica fructu albo* of *Gerard* differs not from the common *Vicia*, except that it is taller, and bears a larger and rounder Grain, which, in Colour, Shape, and Size, is equal and like to the common white Pea. *Raii Hiſt. Plant.*

It agrees in Virtue with the common Tare, but is not uſed in the Shops.

4. Vicia; vulgaris; acutiori folio; ſemine parvo, nigro. See ARACUS.

5. Vicia; flore albo; ſiliqua longa, glabra. *Ind.* 160.

6. Vicia; folio, & ſiliqua latis, ſiliqua hirſuta. *Ind.* 160.

7. Vicia; flore purpureo; ſiliquis brevibus, craſſis, pendentibus. *M. H. Deſcr.* 2. 62.

8. Vicia; folio magno, atroviridi, apice aculeato; ſiliqua ſingulari, quaſi articulata, ſemine nigreſcente cinereo.

9. Vicia; arvenſis; folio ſupremo emarginato, aculeato; flore & ſemine, albo.

10. Vicia; Orientalis; flore ſuave rubente; ſiliquis breviſſimus. *Niſſole.*

The twelve following Species of *Vicia* have Flowers growing thicker together, and in Spikes.

1. Vicia; Orientalis; flore maximo, palleſcente, macula lutea notato. *T. C.* 270.

2. Vicia; perennis; maxima dumetorum; flore obſcure rubente. *M. H.* 2. 61.

3. Vicia; luteo flore; ſylveſtris. *J. B.* 2. 313.

4. Vicia; multiflora. *C. B. P.* 345.

5. Vicia; Bengalenſis hirſuta, incana; ſiliqua Piſi. *H. L.*

6. Vicia; anguſtifolia; purpuro-violacea; ſiliqua lata, glabra. *Magnol. Botan.*

7. Vicia; multiflora; Caſſubica; fruteſcens; ſiliqua lentis. *Breyn. Prodr.*

8. Vicia; major; folio cordato; flore rubro; fructu albo, Piſi minoris inſtar. *M. H.* 2. 63.

9. Vicia; ſegetum; ſingularibus ſiliquis glabris. *C. B. P.* 345.

10. Vicia; minima; cum ſiliquis glabris. *T.* 397.

11. Vicia; maxima; tetraphylla, vel pentaphylla. *H. C.* 229.

12. Vicia; maritima; flore albo oblongo. *Bobart. Boerh. Ind. alt. Plant.*

Vicia, according to *Varro de R. R.* is derived *à Vinciendo*, from binding; becauſe, by its Tendrils, like the *Vitis*, or Vine, it climbs, and binds itſelf about other Plants. But we are rather of Opinion, with *Voſſius*, *in Etymolog.* that *Vicia* comes from the *Greek*; for thoſe of *Aſia* call this Plant βίκιον, (*Bicion*) as we are told by *Galen*, *Lib.* 1. *de Alim. Fac. Cap. penult. Raii Hiſt. Plant.*

This Plant affords good Fodder for Cattle; for its Seed ſupplies the Place of Oats; and the Herb ſerves inſtead of Graſs. Men have, alſo, eaten the Grain, in Times of Scarcity, and found themſelves never the worſe for it. The Meal of Tares is like the Meal of the Seed of Fenugreek. *Hiſt. Plant. aſcript. Boerhaav.*

VICIA LUTEA. See APHACA.

VICIÆ SIMILIS. A Name for the *Lathyrus*; ἀμφίκαρπος; *ſupra & infra terram ſiliquas gerens.*

VICINITRAHA, or VICINITRACTUS. *Caſtellus* informs us, that *Felicianus* makes Uſe of the firſt, and *Ingraſſias* of the ſecond, to expreſs an *Eryſipelas*. But this muſt have happened through a groſs Blunder, with reſpect to the Derivation of the Word *Eryſipelas*.

VICTICELLÆ, or VITICELLÆ LIQUOR, in *Paracelſus*, is a Sort of Wine.

VICTORIALIS. See ALLIUM.

VICTORIATUS DENARIUS, in *Marcellus Empiricus*, is half a Dram. As a Coin, it is half a *Denarius*.

VICTORIOLA. A Name for the *Laurus Alexandrina. Blancard.* See RUSCUS; *latifolius*; *fructu folio inſidente.*

VICTUS. Imports the ſame as DIÆTA.

VIGILIÆ. See *Pervigilium*, under the Article PYRETOS.

VIGO (*Johannes de*). A celebrated Surgeon of *Genoa*, about the Year 1517. There are ſome Compoſitions called by his Name. Thus the *Emplaſtrum de Ranis cum Mercurio* is called the *Emplaſtrum de Vigo cum Mercurio*; and without the Mercury, *Emplaſtrum de Vigo ſimplex.* Some Troches are, alſo, called *Trochiſci de Minio Vigonis.* See CORRODENTIA.

The *Emplaſtrum de Minio Vigonis* is thus prepared:

Take of Turpentine, ten Ounces; of Hogs Lard, ſeven Ounces; of the Suets of Mutton, and Beef, and of Oil of Roſes, each half a Pint; of the Oil of Myrtle, of the Ointment of Poplar, and of Ceruſs, each four Ounces; of the Litharges of Gold, and Silver, each three Ounces and a half; of red Lead, three Ounces; of the Fat of Fowls, two Ounces; and of white Wax, eight Ounces: Make into a Plaiſter, according to Art.

After the Litharges, the red Lead, and the Ceruſs, are reduced to a fine Powder, they are to be mixed, in a Baſon, with the Oils, the Fats, and the Ointment of Poplar: To theſe add two Pints of common Water, and boil the Mixture, conſtantly ſtirring it with a wooden Spatula, till it has acquired the Conſiſtence of a Plaiſter, and the Water is quite conſumed, which is known when it ceaſes to boil: Then melt in it the eight Ounces of white Wax, broken in ſmall Pieces, and the Turpentine, to make a Plaiſter, to be kept for Uſe. This Plaiſter is of a drying, cicatriſing, and reſolvent Nature. *Lemery, Pharmacopée univerſelle.*

VIGOR, with reſpect to Diſeaſes, is the ſame as ACME.

VILLI. Small Hairs, or Fibres, or the Nap of Cloth. Hence, from the Similitude, the ſhaggy Fibres on the Inſide of the Inteſtines, and many other Parts of the Body, are called *Villi.*

VILTRUM. The ſame as FILTRUM. *Viltrum Philoſophorum* is an Alembic.

VINCA PERVINCA. See PERVINCA.

VINCETOXICUM. See ASCLEPIAS.

VINCULUM. A Bandage. *Vinculum Soſtrati* is a Species of Bandage deſcribed by *Galen*, in his Treatiſe of Bandages, Number 81.

VINDICIANUS. *Marcellus Empiricus*, in *Cap.* 16. gives a Remedy for a Cough, which he aſcribes to *Vindicianus.* Rub, ſays he, live Sulphur, mix it with very old Hogs Lard, and make them up into Pills, of ſuch a Size, that they may be eaſily ſwallowed: Give three the firſt Day, two the ſecond, and one the third. This Medicine, he informs us, is excellent for Horſes, as well as for Men.

VINUM. Wine.

The Principles, or Elements, of which Wine is compoſed, are, firſt, An inflammable Spirit: Secondly, A Phlegm: Thirdly, An acid tartareous Salt: And, fourthly, A certain ſulphureous and oleous Subſtance.

Wines, therefore, differ from each other, with reſpect to Taſte, Smell, and Virtues, according to the Mixture and Proportion of theſe Elements. Such Wines as contain a large Quantity of inflammable Spirit, ſoon intoxicate, and heat the Body; but Wines in which the phlegmatic or tartareous acidulated Parts predominate, are of a laxative and diuretic Quality; nor do they eaſily affect the Head. Wines which contain a great deal of an oleous and ſulphureous Subſtance, ſuch as old Wines, are of a deep yellow Colour, of a ſtrong Taſte, and Smell; and as they are not eaſily tranſpired, ſo they remain long in the Blood, and dry the Body.

There is, alſo, another eſſential Element, or Principle, in Wines, which is a certain ſweet, oleous, temperate, and viſcid Subſtance, diſcoverable in Wines which are not ſufficiently fermented, or gently boiled; and ſuch a Principle is, particularly, obſerved in ſtrong Sack, Frontignac, and Hungarian Wine. This Principle not only renders Wines grateful to the Taſte, but, alſo, of a nutritive and demulcent Quality.

Tho' all Wines may be reſolved into their conſtituent Principles, that is, a Spirit, an Oil, a Phlegm, a ſweet Subſtance, and an acid tartareous Part; yet they differ in this, that ſome contain a ſweet and ſubtil Sulphur, whereas others have a coarſer Sulphur, which is not ſo grateful to the Taſte.

Thus Rheniſh and Hungarian Wines contain a far more grateful Spirit, and a more ſweet and ſubtil Sulphur than the Wines of *France*, *Turin*, and *Meiſſen*, in which the Spirit and Sulphur is ſomewhat harſh, and diſagreeable to Nature. Hence it is, that the Smell, only, of old and generous Rheniſh Wine, ſurpriſingly refreſhes the Strength; which Effect is not to be expected from other Wines. The tartareous Principle of Wines is, alſo, different; ſince ſome contain a large Quantity of coarſe Tartar, ſuch as the Provencial Wines; and others a more ſubtil Tartar, ſuch as the Rheniſh Wines. Some Wines, ſuch as thoſe

those of the *Moselle*, contain a tartareous nitrous Salt, of a somewhat bitterish Taste, on which Circumstance depends their laxative and diuretic Quality.

In order to such an Analysis of Wines as may discover their Principles, a due and careful Distillation is of great Importance.

Three Pints of the best Rhenish Wine, distilled in a glass Cucurbit, yielded thirteen Ounces of Spirit, with which, however, was mixed almost half that Quantity of Phlegm.

Three Pints of Franconian Wine yielded eight Ounces of Spirit, of the like Nature with the former. A Pint and three quarters of strong Hungarian Wine, subjected to Distillation in a Cucurbit, yielded eight Ounces and a half of a Spirit far stronger than the former; so that there was hardly a third Part of Phlegm mixed with it.

From a Pint and six Ounces of Burgundian Wine, subjected to Distillation in the same manner with the others, I obtained eight Ounces of Spirit, mixed with half that Quantity of Phlegm. Hence it is obvious, that Hungarian Wine is far more spirituous than Burgundian Wine, which is more spirituous than Rhenish Wine, which is more generous than Franconian Wine.

After abstracting the Spirit from the Wine, by Distillation, what remains in the Cucurbit acquires a deeper Colour, and is of an highly acid Taste; only with this Difference, that the Remainder of the Hungarian Wine is of a somewhat sweetish acid Taste, that of the Burgundian of an astringent acid Taste, that of the old Rhenish Wine of a more acid Taste, and that of the Franconian Wine most acid of all.

When the Spirit, abstracted from the Rhenish Wine, is again poured to the Part remaining after Distillation, or the acid tartareous Phlegm, its penetrating acid Taste is, by this means, greatly corrected, and lessened; but its former Taste and Smell of Rhenish Wine does not return, because the specific Taste of any thing depends upon a particular Mixture and Texture of the Parts, which are dissolved and destroyed by the Distillation. And because, by the new and mutual Confusion of the Liquors, the Particles are not so united as they were before, hence, also, the Taste is changed.

Since a vinous Spirit corrects and infringes Acidity; and since Hungarian and Burgundian Wines contain more Spirit than any other Kinds of Wines, we may justly conclude, that these Wines are proper for those whose Stomachs generate large Quantities of Acids; such as old Persons, those subject to hypochondriac Disorders, and Quartan Fevers: And that they are principally beneficial, when Chylification is over, and many acid Crudities of the digested Aliments remain in the Stomach.

As the Remainder of the Burgundian Wine is an acid and austere astringent Phlegm, we may justly conclude, that this Wine is proper for corroborating the Tone of the Stomach and Intestines; and that the Use of it is more expedient when the Body is preternaturally soluble, than when the Patient is costive.

The Colours of Wines depend on the sulphureous oleous Principle, which, by the intestine fermentative Motion, is intimately resolved and mixed with the Parts of the Wine: The deeper the Colour, therefore, of Wine is, the larger Quantity of Oil they contain. When, therefore, the Spirit is abstracted from the Wine, the spirituous, aqueous, and acid Parts, are carried off, and there is left in the Vessel a thick Mass, of a darkish and very deep Colour; to which, if a considerable Quantity of Water is poured, it is immediately tinged with the same Colour the Wine had in its natural State; which is a sure Proof that the Wine derived its Colour from the thick, sulphureous, and oleous Mass, which remains in the Vessel after Distillation.

Red Wines receive their Colour from the red Pellicles of the Grapes, upon which they stand long infused; the Acid, therefore, which is in Musts, also, extracts and exalts the Colour which is contained in these Pellicles; for which Reason, that Colour is purely adventitious. All red Wines are possessed of an astringent Taste and Virtue, because they stand long infused not only with the red Pellicles of the Grapes, but, also, with their small Stones, which are of a manifestly astringent Taste. Hence they extract the astringent Principle from these two Substances, and receive it into themselves.

Red Wines, especially of the Burgundian Kind, when distilled, and afterwards reduced to a thick Consistence, by Evaporation, in a proper Glass, are of a deep-red Colour, and a strongly-astringent Taste; and a Portion of the Wine, thus inspissated, when poured into a considerable Quantity of Water, not only tinges it with a red Colour, but, also, gives it an astringent Taste.

When to red Wine, or the Extract of it which remains after Evaporation, there is poured a sufficient Quantity of the Oil of Tartar *per Deliquium*, the grateful red Colour of the Wine is destroyed, and changed into one of a brownish Kind; the Mixture becomes turbid, and deposits a certain Sediment at the Bottom; a certain Proof that the beautiful reddish Colour does, in a great measure, proceed from the Acid exalting the red Colour.

The yellow Colour of Rhenish Wines, also, proceeds from a sulphureous and oleous Principle; and as the Sulphurs, which are, as it were, the Matrixes of Colours, are exalted, by the Admixture of alcaline Salts; so the like happens in Rhenish and French Wines, the yellow Colour of which is changed into brown, by the Affusion of a sufficient Quantity of Oil of Tartar *per Deliquium*, or urinous Spirit of *Sal Ammoniac*.

When an alcaline Liquor is mixed with Wines of a considerably acid Taste, the Colour is not only changed, but, also, a gentle Effervescence excited; and the Acid of the Wine, meeting with the alcaline Salt, passes into a neutral tartareous Salt, such as tartarised Tartar, or the *Terra foliata Tartari*, which is generally prepared of Wine Vinegar, and the Salt of Tartar.

Since neutral Salts, consisting of a subtil Acid, and an alcaline Salt, such as the dry *Terra foliata Tartari*, or the *Arcanum Tartari*, which is only the *Terra foliata Tartari* dissolved, are of a remarkably abstergent, aperient, and resolvent Quality, and promote the Excretions by Stool and Urine, they are, therefore, highly beneficial in removing chronical Disorders. And since from the best Rhenish Wine, mixed with Oil of *Tartar per Deliquium*, the same Salt may be extemporaneously prepared, it is obvious, that Rhenish Wine may, by this simple means, be rendered highly medicinal.

The Acid remaining after the Abstraction and Evaporation of Rhenish Wine, if mixed with Oil of Tartar *per Deliquium*, produces so violent an Ebullition, that the Froth comes over the Lips of a pretty high Vessel; the Mixture becomes of a deep-brown Colour; and, a few Hours after, the Froth subsides and vanishes; and a Liquor highly similar to the *Arcanum Tartari*, both in its saline Taste, Colour, and Virtues, subsides to the Bottom. The Reason why, during the Effervescence, so great a Quantity of Froth is raised, seems to be this, that the Extract of Wine, besides an Acid, contains a large Quantity of Sulphur, and a viscid Principle: Hence the Affusion of the Alcali excites a great Effervescence, from which arise numerous vaporous and aereo-ethereal Particles, which, being sheathed up in the viscid Principle, cannot fly freely off into the Air, but raise the viscid Particles into Bubbles.

The Countries lying between the fortieth and fiftieth Degrees of Elevation of the Pole, such as *Hungary*, *Spain*, *Portugal*, *Italy*, *France*, a great Part of *Germany*, *Austria*, *Transylvania*, and a great Part of *Greece*, produce the best Wines; because, in these Parts, the Influence of the Sun is greater than in others.

It is, also, certain, from Experience, that mountainous steep Places, with Rivers at their Roots, produce the best Wines; for, besides the Influence of the Sun, the Goodness of Wines, in a great measure, depends on the fine and subtil Nourishment of the Grapes. Now because the Mountains are exposed to the Night Dews, which abound about the Rivers, and contain a subtil Water intermix'd with an ethereal Principle, it is not to be wondered at, if Dew should be the best Nourishment for the finest Vines. But Dew alone is not sufficient for the Nourishment of Vines, which, also, requires Rains.

The Nature of the Soil, also, contributes much to the Production of good Wine; for we observe, that the best Wines grow not in fat, clayey, gross, and black Soils; but rather in such as are stony, sandy, or chalky; which Kinds of Earths, though apparently barren, are yet very proper for Vines; because they long retain the solar Rays, which, by cherishing the Roots, make the Nourishment pass through all the Pores of the Plant. Besides, the Waters, passing through such Earths, are attenuated, and strained, and their grosser Parts separated, and retained; so that the nutritive Juice of the Plant must be the more pure and subtil. The Causes of the different Tastes, Salubrity, and Insalubrity of Wines, are, without doubt, placed in the different Nature of the Soil; since Tracts of Ground, lying on the same Mountain, with equal Aspects to the Sun, and bearing Vines of the same Species, yet yield Wines greatly different, with respect to Salubrity, Taste, and a penetrating Quality. The superior Virtues of the *Tokay* Wine, are, by the Inhabitants of that Part of the Country, ascribed to the Gold there produced, but more justly to the large Quantity of corroborating Sulphur contained in the Earth; since neither Gold, nor any other Metal, can contribute to the Fruitfulness of the Earth, much less to exalt the Juices of Vegetables, or render them more salutary. But the Reason why all the *Hungarian* Wines are more salutary than others, depends on the Subtilty and Fineness of the Nourishment with which the Vines are nourished, and the large Quantity of the aereal and ethereal Principle, which is intimately mixed with their Juices, and which renders both Aliments and Medicines far more salubrious than they would otherwise be.

The more ſubtil and light Waters are, and the more they abound with an aereo-ethereal Matter, the more wholſome they are. Medicinal Waters are only efficacious in curing Diſeaſes, on account of the Salts, together with the ſpirituous ethereal Element, which they contain; and if, by Heat, and the free Acceſs of the Air, they are deprived of theſe, their ſalutary Virtue immediately is forthwith rendered languid, and deſtroyed. In like manner, an aereo-elaſtic Spirit, in the Wines, impels and promotes the Motion not only of the Solids, but, alſo, of the Fluids, and ſtimulates the moving Fibres to gentle Contractions; ſo that the Circulation of the Blood and Humours, together with the Work of Secretion and Excretion, ſo neceſſary to Life, are facilitated, and promoted: And, for this Reaſon, becauſe the Hungarian Wines conſiſt of highly ſubtil and ſpirituous Parts, they excellently reſtore the Strength, and, by promoting a gentle *Diaphoreſis*, eliminate the crude and ſuperfluous Juices from the Body. But we ſhall, for the Reader's Satisfaction, enumerate the moſt conſiderable Wines in *Europe*, and ſpecify their medicinal Virtues and Qualities.

Italy, then, affords generous and delicious Wines; among which, we ſhall firſt mention that Wine produced at the Foot of Mount *Veſuvius*, call'd, by ſome, *Lachryma Chriſti*, and, by others, the *Virgin Wine*, becauſe it flows ſpontaneouſly, like Tears, from the beſt Grapes, before they are trod. This is a ſtrong Wine, of a ſplendid red Colour, a grateful Smell, a ſweetiſh Taſte, and a ſalutary Quality; for it ſoon proves a ſafe and effectual Diuretic, on account of its Thinneſs.

Alban Wine, ſo call'd from its growing at the City *Alba*, is beneficial, as well for thoſe who are, as thoſe who are not ſound, ſince it gently promotes Perſpiration and Urine. This Wine is of two Kinds, Red, and White.

Among the beſt Wines we may, alſo, reckon the *Tuſcan* Muſcadel, or the Wine of *Monte Fiaſcone*. This Wine is highly palatable, and grateful to the Taſte.

The Red Wine of *Monte Bolzano*, and the Moſcadel Wine of *Peruſa*, are both highly celebrated, and yearly exported in great Quantities, from theſe two Cities.

The *Punic* Wine was ſufficiently known to the Antients: It is produced on the rocky Mountain called *Pſorce*, ſituated in *Capo d'Iſtria*, in the *Adriatic* Gulph. This is a ſweet Wine, of a fragrant Smell, and does not ſoon affect the Head, and Operations of the Mind. *Pliny* affirms, that, by the Uſe of this Wine alone, *Livia Auguſta* lived to be eighty-two Years of Age.

Near *Vincentia* there is an excellent Wine produced, called *Marciminian* Wine, which is ſaid to be leſs hurtful to gouty Patients than any other Wine whatever.

In the Diſtrict of *Aquila* is produced a noble Wine, called *Roſazer*, from a City of that Name in the *Julian* Forum.

The *Vernaccan* Wine, ſo called from a red Mountain, known, at preſent, by the Name of *Vernacia*, is a rich and generous Wine, and ſufficiently known, not only in *Italy*, but through *France* and *Britain*.

The *Rhetian* Wines, produced in the *Telinian* Valley, are, alſo, very rich, and delicious; ſo that *Auguſtus* is ſaid to have delighted in them. They are red, like Blood, ſweet, and leave a ſomewhat auſtere Taſte on the Tongue.

Though the Wines in *Italy* are generally ſweet, yet there are auſtere Wines prepared in the northerly Parts; and theſe are uſed with great Succeſs, in hot Weather, as, alſo, in hot Diſeaſes, in order to extinguiſh the exceſſive Heat.

In *Greece*, the Wines of *Crete* and *Cyprus*, formerly known by the Name *Punic*, are every-where greatly eſteemed.

Among the *French* Wines, *Champaign* is generally held in moſt Eſteem: It is grateful to the Stomach, friendly to the Nerves and Head, and ſoon paſſes off by Urine. It is of a delicious Taſte, on account of the Admixture of a ſubtil and ſpirituous Acid.

Next to this are the *Burgundian* Wines. Theſe are generous, in Colour reſembling the Eye of a Partridge, of a grateful Taſte, leſs volatile, and better able to bear an Admixture of Water, than *Champaign*.

Paris Wine, eſpecially if made of ripe Grapes, is thin, but grateful to the Taſte, and not proper for being mixed with Water.

In *Bourdeaux* is produced Claret, which is a Wine of a ſomewhat auſtere Taſte, does not affect the Head, and Operations of the Mind, and excellently corroborates the Tone of the Stomach and Inteſtines. The beſt *Bourdeaux* Wine is that call'd *Pontac*.

The *Orleans* Wines, both of the red and white Kinds, are very generous, and beneficial to the Stomach; but they generally affect the Head.

The white Wines of *Poitou* are, alſo, well known, and greatly reſemble Rheniſh Wines, only they are more crude.

Among the beſt of the *French* Wines we may, alſo, reckon *Frontignac*, and Muſcadine, which is red, highly generous, of a ſweetiſh ſubauſtere Taſte, and, on account of its Richneſs, requires an Admixture of Water.

Among the good *French* Wines, we may, alſo, reckon *Hermitage*, produced between *Valence* and *St. Valiere*. This is a rediſh ſubauſtere Wine, reſembling the Taſte of Myrtle-berries.

Spain, alſo, furniſhes excellent Vines, which, on account of the due Maturity of their Grapes, yield excellent Wines.

Canary, at preſent brought from the *Canary* Iſlands, eſpecially the *Great Canaries*, is produced of the moſt rich and generous Kind about *Palma*.

Malmſey Wine is expreſſed from large round Grapes, of the beſt Kind; and laſts ſo long, that it may be tranſported to any Part of the World.

Malaga Wine, or Sack, is fatter than Canary. The *Petriſmont* Wine grows, principally, near the Town *Gvaldaclazar*, on the Vines long ago tranſplanted by *Petrus Simon* from *Germany* to *Spain*; for a Tranſplantation from one Climate to another will produce Fruit different in Taſte, Sweetneſs, and other Qualities, according to the different Influence of the Sun, Nature of the Soil, and other Circumſtances.

The Country near *Henes*, of *Andaluſia*, is very fertile in Wine, which, however, is ſomewhat auſtere, and ſoon becomes acid in warm Places. Of the ſame Kind are the Wines produced about *Madrid*.

Alicant Wine, produced in *Valentia*, is red, but thick, grateful to the Palate, but hurtful to the Stomach. What we commonly call *Tent*, is not unlike this Wine.

Wine, in general, is poſſeſſed of many Virtues, both for the Purpoſes of Prevention, and Cure: By means of this Liquor, moderately and duly uſed, Longevity is procured, and the Body preſerved robuſt, and in good Plight: Beſides, Wine has a happy Influence, not only on the Body, but, alſo, on the Mind, whoſe Powers and Faculties it invigorates beyond all other Liquors, or Medicines, hitherto known. For, as *Gryllus*, *de Sap. dulc. Lib.* 1. informs us, the *Greeks*, on account of the Excellence of their Wines, were the glorious Sources from which Learning diffuſed itſelf through all the other Parts of the World; but that they loſt, at once, their Genius, and Reputation for Literature and Science, when the *Turks* extirpated their Vines: And it is certain, from Experience, that the *Italians*, *French*, and *Germans*, in whoſe Countries good Wines are produced, are more ingenious and acute, than the Inhabitants of other northern Nations, who uſe Malt Liquors. The Heathens were ſo ſenſible of the happy Influences of Wine, that they placed *Pallas* and *Bacchus* in one Temple, in order to intimate that Prudence was increaſed by Wine. And the antient Poets have repreſented their Gods as wiſer than Mortals, for no other Reaſon than that they uſed Nectar for their Drink, and Ambroſia for their Food. The Fire of the Poets, and all the happy Flights of *Homer*, *Ennius*, *Horace*, and *Ovid*, are the glorious Effects of Wine. Nor is this all; for this Liquor baniſhes Cowardice, eradicates a daſtardly Turn of Mind, and inſpires the Soul with Courage, Intrepidity, and Alacrity. Beſides, Wine is an univerſal Preſervative of Health, and long Life; for ſuch as is the Circulation of the Blood, ſuch the State of the Health will be. Now it is certain, from Experience, that when the Humours are groſs, and their Circulation ſlow, from a want of due Force in the Heart, or any other Cauſe, the animal Functions, and, conſequently, Health, are greatly impaired. But theſe Misfortunes are prevented by Wine, the due Uſe of which augments the Heat of the Body, renders the Pulſe ſtronger, and quicker, forces the Blood from the Centre to the Circumference, increaſes the Tranſpiration, promotes a Diſcharge of Urine, renders the Face red, and the Veins turgid, and, in a Word, refreſhes the whole Body and Mind.

The Antients were ſo ſenſible of all this, that they recommended Drunkenneſs, not of the intenſe and habitual, but of the rare and moderate Kind; for exceſſive drinking of Wine, like the Abuſe of other Remedies, inſtead of good, produces bad Effects: And this Liquor is at proper Intervals only to be drank in greater Quantities than ordinary, with a View to rouſe the Spirits, and animate the Soul, depurate the Blood, and remove Obſtructions. Nor, for theſe Reaſons, is it to be doubted, but Wine is an excellent Preſervative againſt hypochondriac Diſorders, Weakneſs of the Stomach, Cachexies, Suppreſſions of the Hæmorrhoids, Tumors and Obſtructions of the Liver and Spleen, the Stone in the Kidneys and Bladder, the Gout proceeding from a cold Cauſe, catarrhous and other Defluxions, Rheumatiſms, Laſſitude and Heavineſs of Body, Loſs of Memory, Dulneſs of Hearing, Dimneſs of Sight, Weakneſs of Senſation and Motion from a Fault of the Spirits and Nerves, Impotence in Men, and Sterility in Women: So that we

may juſtly affirm, that if Mankind knew what ſalutary Virtues were implanted in Wine, they would not be ſubject to ſo many Diſorders, nor ſtand in need of ſo many Drugs and Phyſicians.

Having already conſidered the preſervative Effects of Wine, we now come to inquire in what particular Diſorders the Uſe of it is proper.

In malignant Fevers, then, nothing is more excellent than Wine. The Malignity of theſe Diſorders is known from a Defect of Motion and Strength, and from a want of a due ſpirituous Quality in the Blood, ariſing from a ſlow Circulation of the ſame; all which indicate a certain Diſpoſition of the Fluids to Putrefaction. It is, therefore, expedient, in all theſe Diſorders, to reſtore the Strength, rouſe the Spirits, increaſe the Circulation of the Blood, and promote Perſpiration. Theſe are the Deſigns of all Alexipharmics. But all theſe Intentions are anſwered by Wine, as is obvious, not only from the Authorities of practical Writers, but, alſo, from Experience: For I myſelf have known many cured of malignant Diſorders, only by the moderate Uſe of Wine.

In thoſe Diſorders where the peccant Matter is to be expel'd to the Surface of the Body, ſuch as the Meaſles, Small Pox, and *Petechiæ*, when Nature is weak, and the Motion of the Heart inſufficient for the Expulſion, or when, through Weakneſs, there is a Retroceſſion of the Eruptions, Wine is highly proper; but we are to abſtain from its Uſe, when theſe Diſorders are accompanied with an exceſſive Heat, an Ebullition of the Humours, and a quick Pulſe.

In continual Fevers, *Hippocrates*, *in Lib. 2. de Morb. acut. Sect.* 61. recommends White-wine, both alone, and mix'd with Water. Numberleſs Practitioners are of the ſame Opinion. Thus *Foreſtus*, *Lib. Obſervat.* 1. *Obſ.* 1. recommends fine ſmall Rheniſh White-wine; and *Helmont*, *de Feb. Cap.* 12. tells us, "that they who moderately uſe Wine in continual Fevers, "eaſily recover, preſerve their Strength, and ſooner recover "their former State and Condition."

Wine is ſtill more proper in Intermittents, which generally ariſe from Crudities, an Obſtruction of the Evacuations, and eſpecially a Suppreſſion of Tranſpiration. This Liquor is to be exhibited pretty liberally, on the Days of Intermiſſion; but ſparingly, or not at all, during the Paroxyſm, unleſs in the Decline of the Diſeaſe, and when the Body is diſpoſed to ſweat.

The Reaſon why Wine ought not to be prohibited in almoſt all Fevers, is this: A Fever is an intenſe Commotion of Blood, excited in order to remove and expel what threatens the Deſtruction of the Body. Now it is ſufficiently obvious, that where this Motion is intenſe, and too ſtrong, Wine is to be ſparingly uſed; but if this Motion is ſo weak and languid, that Nature ſeems ready to ſink, it is to be quickened by a proper Doſe of White-wine, in order to reſtore languid Nature.

In Syncopes, and Loſs of Strength, nothing is more excellent than Wine. *Galen*, *in Lib.* 3. *de Medic. Facult.* orders thoſe afflicted with a Syncope to drink Wine which is thin, of a yellow Colour, and old, rather than ſuch as is new, or of a middle Age: Becauſe the firſt not only reſtores the Strength, and recruits the Spirits; but, alſo, by its Smell, or when applied to the Heart and Wriſts, far ſurpaſſes all other Cordials, and Analeptics.

In Nauſeas, Weakneſs, Indigeſtion, and Inflation of the Stomach, nothing is more beneficial than Wine. Hence St. *Paul*, as we ſee in 1 *Timothy* v. 23. adviſes *Timothy* to uſe Wine for a certain Diſorder of his Stomach. *Galen*, *in Lib.* 4. *de Sanitate tuenda*, *Cap.* 6. tells us, that the Wines which are yellow or white, fragrant and thin, are excellent Stomachics, eſpecially if they are gently aſtringent; and ſuch are the Rheniſh Wines, which, on account of their ſubtil, acid, ſpirituous, and aſtringent Principle, are highly beneficial, in exciting the Appetite, ſtrengthening the Stomach, and promoting the Digeſtion of the Aliments.

In a *Fames Canina*, or preternatural Voracity, *Hippocrates*, in *Sect.* 6. *Aphor.* 21. recommends the drinking of Wine; and his Advice is founded on Reaſon: But that Author did not, in this Paſſage, mean every Wine, but only ſuch as is generous, pure, and old. For the Cauſe of this Diſorder is an acid corroſive Humour in the Stomach, which, by ſuch Wine, is excellently corrected, juſt as the corroſive Nature of Spirit of Nitre, or Vitriol, is corrected by the Admixture of Spirit of Wine; or as the Acidity of Tartar, ſo long as it is in Conjunction with the Wine, is ſo corrected, as to prove grateful to the Palate.

In order to allay Thirſt, nothing is more effectual than Wine mixed with Water; for, by this means, it far ſooner extinguiſhes Thirſt, than if Water had been exhibited alone; ſince Thirſt ariſes from an Obſtruction and Conſtriction of thoſe Glands which diſcharge the Saliva into the Fauces, for moiſtening them, and the Oeſophagus; but theſe Glands are better opened by Wine and Water, than by pure Water; for which

Reaſon, *Hippocrates*, in acute Fevers, was not afraid to preſcribe a Mixture of Water and Wine.

In Vomitings, of the idiopathic Kind, or ſuch as accompany Fevers as a Symptom, thin Wine is preferable to all other Liquors.

In Colics, eſpecially thoſe ariſing from Flatulencies, or viſcid Crudities, nothing is more beneficial than old Rheniſh Wine. For this Purpoſe, *Hippocrates*, *Lib.* 2. *Epidem.* 6. recommends rich Wine, becauſe it renders crude Matter fit for Concoction, attenuates what is thick, and diſcuſſes Flatulencies. *Crato*, alſo, *in Conſ.* 169. recommends Rheniſh Wine in Colics, but forbids the Uſe of *Moravian* and *Auſtrian* Wines; as, alſo, the Malmſey Wines, which are ſweet, thick, and turbid.

In Diarrhœas, and Dyſenteries, which appear as the Symptoms of acute Diſtempers, ſmall Rheniſh-wine, either alone, or mixed with a Ptiſan, produces excellent Effects, ſince it is poſſeſſed of a ſubaſtringent Quality, by which the Tone of the Inteſtines, and their relaxed glandular Coats, are greatly ſtrengthened: And as, in theſe Diſorders, it is highly expedient to move the Humours from the Centre to the Circumference, to augment Perſpiration, and provoke Urine, hence Wine is excellent, becauſe it produces ſuch Effects. Red Wines, on account of their greater Aſtringency, are generally recommended; and, if they are good, they may be uſed for that Purpoſe.

In Obſtructions of the Liver and Spleen, in the Jaundice, and Cachexy, Wine produces excellent Effects. *Solenander*, a celebrated Practitioner, recommends a Mixture of chalybeate Water with a Wine which is white, pure, ripe, not ſtrong, but pellucid, ſuch as the Rheniſh and Moſelle Wines, as highly grateful to the Liver; and aſſerts, that, by their aſtringent Quality, they corroborate the Viſcera. But ſweet Wines, becauſe they increaſe the Quantity of the Blood, are greatly condemned, not only by *Hippocrates*, *Lib.* 2. *de Morb.* but, alſo, by *Guarinonius*, *in Conſ.* 117.

In Dropſies, *Hippocrates*, *in Lib. de intern. Affect.* extols auſtere Wines; and aqueous Wines, in *Lib.* 3. *Epidem. Sect.* 37. And *Epiphan. Ferdinand. Hiſt. Med.* informs us, that Perſons labouring under an Aſcites have been cured by the Uſe of Malmſey Wine alone.

It is juſtly to be doubted, whether Wine is proper in hypochondriac Diſorders; for I have frequently obſerved in Practice, that the Symptoms were exaſperated by acid Wines, eſpecially of the rough Kind. The Reaſon why hypochondriac Patients cannot bear Wines inclining to Acidity, ſeems to be this: On account of the ſlow periſtaltic Motion of the Inteſtines, their Contents are not promoted, hypochondriac Patients being generally coſtive, but become ſtagnant; and, by their Continuance, contract an Acrimony. Hence Wine, in ſuch Patients, is by the Stagnation of the Fæces, converted into a ſtrong Vinegar, which ſtimulates the nervous Parts to Spaſms. But, ſince hypochondriac Patients require a Reinforcement of Strength, and call for additional Force and Heat in their Stomach, Wine is not to be abſolutely denied them. Hence *Brunnerus*, in *Conſ.* 9. in hypochondriac Diſorders, prefers old *Rheniſh*, or good *Hungarian* Wines, moderately uſed at Meals. But thoſe afflicted with Diſorders of this Kind, ought to abſtain from red, auſtere, and ſweet Wines, and from the exceſſive Uſe of all.

In a Scurvy, which generates a large Quantity of fixed tartareous Salts, *Rheniſh* Wine is excellent, becauſe it is diuretic. Hence *Sachſius*, in *Tract. de Vite Vinifera*, informs us, that *Rheniſh* Wines are highly beneficial in a Scurvy, becauſe they, by Urine, evacuate the tartareous Sordes; and that, in ſcorbutic Patients, he has obſerved an Evacuation of thick Urine, abounding with Tartar, procured by *Rheniſh* Wine. *Reiſner*, in *Lib. de Scorb.* recommends ſtrong, generous, and unmixed Wines, for ſcorbutic Patients; but orders them to be drank in a ſmall Quantity; and, if the Patient's Heat is increaſed, to be diluted with Water mixed with Raiſins.

In the Stone of the Kidneys, ſweet, generous, and oleous Wines are by *Crato*, in *Conſ.* 53. juſtly condemned, becauſe the Stone is generally formed by a Redundance of Blood obſtructing the abdominal Viſcera and Kidneys, and producing, firſt, an Inflammation, and then an Ulceration of the Kidneys, and then the Stone. But that a Plethora is augmented by ſweet Wines, we have already obſerved. The Stone is, alſo, generated in the Kidneys, by turbid and auſtere Wines, ſuch as thoſe of *Numburgen* in *Germany*. But *Rheniſh* Wines are good againſt the Stone, becauſe they are highly diuretic. *Schulzius*, in *Conſ.* 111. recommends the *Neccarine* Wines. *Unzerus de Nephrit. Cap.* 23. extols rich Wines, moderately drank, after due Evacuation of the Body. *Montanus*, in *Conſ.* 229. greatly recommends pure, ripe, and rich Wines of a white Colour, in nephritic Diſorders. A Strangury, according to *Hippocrates*, in *Sect.* 7. *Aph.* 28. is removed by drinking Wine; but this Aphoriſm is to be underſtood principally of generous Wine, becauſe the Diſorder treated of gene-

rally

rally ariſes from a Suppreſſion of Tranſpiration, which is reſtored by Wine of this Kind.

It is a Queſtion of great Moment, Whether Wine is proper in arthritic and gouty Diſorders? It is a common Perſuaſion, that theſe Diſeaſes are produced by Wine, and that they are only to be cured by drinking Water, and abſtaining from Wine. It is certain, that theſe Diſorders ariſe from a ſubtile Tartar, which lacerates the Membranes. Hence Wines, which contain a large Quantity of Tartar, ſeem to be prejudicial in them. But theſe tartareous Diſeaſes proceed from an Obſtruction of the Emunctories, and a Viſcidity and Denſity of the Humours. But Wine excellently conveys the morbific Matter through the Kidneys, which are the proper Emunctories of the Tartar. Hence, there is no Reaſon why Wines ſhould not be admitted, eſpecially ſince the Gout generally derives its Origin from a Weakneſs of the Stomach, a Defect of a ſpirituous Quality in the Blood, and a ſlow Circulation of the Humours. Hence, Wine exhibited with a proper Regimen, and by the Direction of a Phyſician, may prove a Preſervative againſt the Gout, if it is uſed out of the Paroxyſm. But as there are great Differences, not only between Wines, but, alſo, between Conſtitutions, ſo the Phyſician ought to be very circumſpect. Generous Wines that are not acid, ſuch as the *Hungarian* Wines, agree with ſome Patients. *Crato*, in *Conſil.* 253. orders gouty Patients to drink a little *Hungarian*, or *Malmſey* Wines, at Meals. And *Solenander*, in *Conſil.* recommends the moderate Uſe of Wine for gouty Patients, on account of the Weakneſs of their Stomachs. The ſame Author in *Sect.* 4. *Conſil.* 24. ſpeaks in the following manner: "We are to obſerve what "the State of the Stomach, and of the reſt of the Body, can "bear. Nor is abſolute Abſtinence to be injoined Patients of "every Temperament, Conſtitution, Age, and Method of "Life, becauſe there are great Varieties of Patients. If Wine, "eſpecially of the gently aſtringent Kind, is drank moderately, and at a proper Time, its Uſe will be beneficial, inſtead "of hurtful. Thus we ſee, that by the Exhibition of a little "Wine in the Decline of the Paroxyſm, gouty Pains are "alleviated, becauſe by the Heat and Spirits excited, the peccant Humour is diſcuſſed; only the Patient muſt abſtain "from Wine in the Beginning of the Paroxyſm."

Nor muſt we forget a ſingular Method of Cure, uſed by *Hippocrates* in the very Beginning of ſciatic Pains, and a fixed and wandering Gout. His Words on this Occaſion, are found in *Tract. de intern. Affect.* and are ſo memorable, that we ſhall here tranſlate them: "From any Diſorder of the Kidneys "ariſes a proportionable Diſorder of the larger Veins: But "the Veins, when full of Blood, are indiſpoſed by the Approach of any thing foreign to them. If the Diſorder is "in the Right Kidney, a Pain begins to reach to the Acetabulum of the Coxendix: The longer this Diſorder has laſted, "and the farther it has proceeded, the more intenſe Pain deſcends to the inferior Parts. And when this Pain has reached the external Malleolus of the Foot, and the Joint of the "great Toe, it is again convey'd to the Head; and, when it "has there formed an Ulcer, the Head ſeems as if it would "burſt, and the Eyes, and all the Body, are filled with "Phlegm." A little after he ſpeaks in the following Manner: "If you are called in the Beginning of ſuch a Diſorder, you "muſt order a great Quantity of diluted *Mendean* White-wine every Day; and let the Patient be intoxicated till the "Blood burſts from his Noſe; and, when the Blood once begins to flow, there is ſome Diſcharge of it made, for at "leaſt thirteen Days. But, when theſe thirteen Days are "paſt, the Patient is no longer to be intoxicated; nor is ſuch "an Attempt to be made after the Blood begins to flow; but "let him at Meals drink a little more Wine than uſual, "that the Blood may continue to flow." *Hippocrates* deduces theſe Diſorders from a Plethora, which is confirmed by Experience; and this Plethora he endeavours to remove by an Hæmorrhage from the Noſe, which he excites by copious drinking of Wine. But, whether it would not be more expedient to leſſen the Plethora by Veneſection, or procuring an Evacuation of Blood from the hæmorrhoidal Veins, I leave it to others to judge.

Having thus conſidered the Efficacy of Wine for the Cure of internal Diſorders, we ſhall now treat of the Injuries ariſing from its prepoſterous Uſe in ſome Diſorders. It is, therefore, certain from Reaſon and Experience, that in all Diſorders, where a great Quantity of Blood is congeſted, as in Inflammations, and moſt Diſorders of the Head, eſpecially an Headach ariſing from an hot Cauſe, a Phrenitis, Madneſs, Vertigos, Epilepſies, Lethargies, and all drowſy Diſorders, Wines of every Kind are prejudicial; for ſince in theſe Diſorders the Blood is impetuouſly convey'd to the Part affected, and congeſted there, it muſt circulate ſlowly. Hence Wine, which by its Spirit aſcends to the Head, and produces a greater Rarefaction of the Blood, which it forces more copiouſly and impetuouſly from the Heart, to the Part obſtructed, muſt produce an Exaſperation of theſe Diſorders. *Hippocrates*, alſo, in *Lib.* 2. *de Morbis*, in a painful Repletion of the Brain, orders Abſtinence from Wine; and, in the ſame Part aſſerts, that apoplectic Patients, ought totally to abſtain from Wine; and in *Lib.* 4. *de Morb.* he tells us, that in a Sphacelus of the Brain, and a Lethargy, the Patient is totally to abſtain from Wine. A phrenitic Patient, ſays he, ſhould be warmed with warming Liquors, and Potions; but Wine muſt not be uſed for this Purpoſe. And, in his Book *de Inſomniis*, he tells us, that mad Perſons ought not to drink Wine.

Wine is, alſo, hurtful in a Cough and Phthiſis, becauſe the Aſpera Arteria cannot bear its acrid ſtimulating Quality. But ſince ſweet Wine aſſiſts Expectoration, the moderate Uſe of it is not injurious; nor when the Cough is on the Decline, is old *Rheniſh* Wine to be prohibited, but rather preſcribed.

Tirellus, in *Hiſt. Vini*, tells us, that Wines ſupport the Sound, recover the Sick, revive the languid, and perform Miracles. Extracts, Quinteſcences, Stones, Boluſes, and Pills, are to be deſpiſed in Compariſon of Wines, which are the true Support of the innate Heat; and ought, therefore, to be celebrated with Praiſes, proportioned to the Advantages Mankind reap from them. *F. Hoffman.*

In *Spaniſh* Wine, of that Kind which in our Country *(Holland)* we call *Sireeſe Sek*, and very excellent of the Sort, I diſcovered the like ſaline Figures, as I had before obſerved in the *French* Wine, repreſented *Tab.* I. *Fig.* S, [See under ACETUM] and others beſides, which were of a kind of oblong Form, *Fig.* T. The Number of theſe, however, was very ſmall, in Compariſon of what appeared in the *French* Wine, or Vinegar. But I did not doubt of diſcovering more ſaline Figures, had this Wine been as thin as the *French*; for I perceived Multitudes of minute Particles ſubſiding in the Wine, of whoſe Figures I could have no exact View, becauſe of the thick Matter which ſurrounded them. However, after I had kept the Wine three Days in my Repoſitory, without a Cover, I perceived great Numbers of very minute Particles, ſome of which uniting together by their mutual Connexion, reſembled the dry ſmall Branches of ſome Tree; others floated about promiſcuouſly, as ſoon as the Wine was ſtirred. Theſe laſt did not appear to me at firſt of any Figure; but afterwards I found, upon a more accurate Inſpection, that they were endowed with certain Forms and Shapes, and, indeed, the ſame as thoſe of the ſaline Particles, which I had obſerved before in the Vinegar. Among them were many repreſenting little Planes, partly inflected roundwiſe, but of ſuch Minuteneſs, that, as far as I could judge by my Eyes, ten Millions of them together were not ſo big as a Grain of Sand. Of theſe ſaline Atoms, which preſented themſelves to my View, many were large and flat, others thick and ſharp-pointed, and theſe had not yet attained their due Perfection. The Contemplation of theſe Figures confirmed me in the Opinion which I had entertained of the Formation of the acute, or ſharp-pointed Atoms of Salts; and convinced me, that all the acute ſaline Parts of Wine, as well as Vinegar, were at firſt but as ſo many little thin Planes, and that, by an Inflection of the few Angles, they aſſumed the Form of thoſe ſaline Figures, which I had before obſerved in the Wine and Vinegar. For Example, the *French* Wine, and what we call *Sek*, exhibited to my View the little thin plane Figures, repreſented *Tab.* I. *Fig. a b c d, e f g h.* The Sides of one of theſe Figures have a Roundneſs with an Irregularity, while the Sides of the other are thoſe of a Plane; and theſe are all repreſented bigger than the Life, that their Poſition may the better appear, and that you may conceive how the Angles *a* and *d* are incurvated in the manner as is repreſented in the Figure *i k l*; and how the Angles *a* and *b* unite, and form an acute Angle at *i*, in the ſame Figure, and how, from a like Incurvation of the other two Angles *c* and *d*, there reſults a perfect ſaline Figure. But where theſe little Planes are but ſhort, they have but two Angles incurvated, and aſſume the Forms repreſented by the Figures *q* or *r*, or thoſe of V and W, *Tab.* I. relating to the Wine of *Orleans*, under the Article ACETUM. I had as clear a View of the Figures repreſented *i k l, m n o p*, as I ſhould have of half a Sheet of Paper rolled up at the two adjacent, or all the four Corners, and reduced to an acute Angle *i*, or two acute Angles *m*, *o*, with an interjacent Plane, tho' a Figure ſo exquiſitely perfect, as that of theſe ſaline Particles, cannot be aſcribed to Paper, or any thing of that Kind, however modelled: I could, alſo, plainly and fully diſcern, not only the Angles, but the interjacent Cavity, which ſeemed to reſemble the Cavity in a Paper rolled up, in the manner before-mentioned.

Theſe Experiments gave me Occaſion of conſidering whether or no theſe ſaline Atoms, exiſting in Planes, changed their Figure when preſſed in the Mouth, and paſſed from a Plane to a Body furniſhed with two acute Angles; and becauſe they are hollow, by the Curvity of their Angles, pricked the ſenſible

Parts of the Mouth, and lacerated them with their Edges, and ſo produced thoſe uneaſy Senſations on the Tongue and Palate, which we call an *Acid*, or the *Senſe of an Acid*.

I placed ſome *Moſelle* Wine in an open Veſſel, and letting it ſtand in my Summer-room for ſome Days, I afterwards diſcerned ſwimming in it Multitudes of ſaline Figures, of the ſame Kind as thoſe I had before obſerved in the Wine, Vinegar, and *Sek*, with only this Difference, that in many of them I not only obſerved a Cavity and Thickneſs, but could clearly perceive, that they conſiſted of from ſeven to ten Scales, lying one upon another, which I took care to delineate at firſt myſelf in a coarſe manner, and afterwards had them delineated by a ſkilful Painter, as they were expoſed to his View through a Microſcope, and are repreſented *Tab.* I. *Fig.* 5. I ſaw, alſo, ſwimming ſaline Figures of different Sorts, from which again aroſe thoſe half-form'd Figures, repreſented by the Figures in the Table under *t*. In the Wine of *Orleans*, I perceivd ſome of theſe little Figures, but not in ſo great Numbers as in the *Moſelle* Wine. I obſerved, alſo, ſome ſaline Particles, which were perforated by others, as in the Figures *u*; and, beſides theſe, a few ſaline Planes, ſome of which had their Sides incurvated, or circumvolved, as you ſee in Figure *w*. There were, alſo, among them a few, which had their ſhorter Sides, as it were, gradually indented, as in the Figures under *x*. I took Notice, alſo, of a few, which made no more than half of the Figure *s*, as you ſee them under the Letter *y* in the Table, and a few others, which were flat at their Extremities, as you ſee under *z*. But what I highly wondered at was, that in the open Veſſel repoſited in my Summer-room, I could diſcover none of the ſmalleſt of theſe little Figures after four-and-twenty Hours; but after another four-and-twenty Hours, I diſcerned ſaline Figuees, which were leſs than any before obſerved, and whoſe Poſition, on account of their extreme Minuteneſs, I could not come to the Knowledge of, as they were beſides, hidden under the Covert of ſome groſs Matter in the Wine.

I took *Rheniſh* Wine, commonly called *Hochmar*, one Year old, well taſted and generous, before its Fermentation was quite ceaſed, and placing it aſide in an open Veſſel, after three Hours, I diſcovered in it the like ſaline Figures, which terminated at both Ends in an acute Angle, and had many of them an Eminence, in manner of a Back, or the Keel of a Boat turned upwards, being in other Parts very pellucid. Theſe you ſee repreſented *Tab.* I. *Fig.* 1. The ſame Figures I had before obſerved in the *French* Wine. But after I had repoſited the ſame Wine for two Days, I perceived ſome much larger Figures, with different Circumferences, ſome having two, others three or four, and others innumerable Circumferences, ſo cloſely united, that it was very difficult to determine how far theſe Circumferences extended, which were many of them ſo beautiful to the Eye, that nothing in the Sea, whether Coral, or Shells, though the faireſt that can be ſeen, deſerves to be compared with them; theſe you ſee under Number 2. Among theſe Figures were very many pellucid ones, which were deſtitute of any viſible Circumference, except a few, which conſiſted of various minute Figures, of the ſame Poſition with thoſe others. I diſcovered, alſo, Numbers of Figures, whoſe both Extremities were obtuſe: The one Figure had more of a Plane, or was more obtuſe than another; others there were which had only one blunt, or obtuſe End, as under Number 3. In another Place I ſaw ſwimming in the Wine ſaline Figures, which had not only Circumferences, but were furniſhed with Steps or Furrows, as you ſee them repreſented under Number 4. Beſides the Figures aforeſaid, there was a great Number of leſſer ſaline Figures, of different Sizes, and not only furniſhed with Peripheries, or Circumferences, after the manner of the Figures juſt mentioned; but conſtituted of various Forms, ſome of them exactly reſembling a well-made Wine-hogſhead, others a *Rheniſh* Wine-veſſel, which the *Dutch* call *Rhijns-wijnvoeder*, others a long Veſſel, which they call *Lange-toelaſt*, as in Figures 5. Some of them were of ſuch Minuteneſs, that I was obliged to uſe the utmoſt Diligence to diſcover them; and when I had marked the Places, whence the more ſubtile Part of the Wine was almoſt exhaled, I, beſides, obſerved lying various Kinds of ramous or branched Figures, ſome of which ſeemed to proceed from ſome ſaline Figure; and, when I had attentively contemplated thoſe ramous Figures, I found they conſiſted only of the moſt minute ſaline Figures connected to one another, and ſome of them very irregularly diſpoſed, being often united by the Ends of their Branches to the largeſt ſaline Figures, in the manner repreſented under Numbers 6, 7, 8, 9.

In the Beginning of *December* 1684. I tried Experiments upon that Kind of *Rheniſh* Wine, which we call *Hochmar*, of the Growth of the Year 1678. if we may believe our Wine-merchants, who import this Sort of Wine from *Germany*, after I had made the Inſpections into the like Wine, of which I have given an Account. In this Wine I diſcovered at firſt but very few ſaline Particles; but after I had kept the ſame Wine three or four Days in my Repoſitory uncovered, I perceived a far greater Number of ſaline Particles, but in much leſs Abundance than I had before diſcovered in the ſame Wine, when but one Year old. I was very well pleaſed, however, that I could obſerve very diſtinctly, as I thought, moſt of the largeſt Particles to conſiſt of a Multitude of minute ones, an hundred of which I imagined, if I could have numbered them, might enter the Compoſition of one large Particle. Theſe I have repreſented as well as I could, *Fig.* 10. But, after further Conſideration, and cloſe Obſervations, I concluded, that the larger ſaline Particles were firſt concreted, and that afterwards, the leſſer ones, which were big enough to come within my Cognizance, became united with the larger by Appulſion; ſince no ſmall Particles appeared in the Wine about theſe ſaline Parts, nor any thing like unto Salt, whereas in the reſt of my Obſervations (for I made a Dozen Experiments upon theſe Wines, neglecting the reſt) I had found ſaline Particles almoſt of the ſame Magnitude, very ſhining, Multitudes of ſmall ſaline Particles lying near them. I diſcovered, alſo, ſometimes a ſmall ſaline Figure, which ſeemed to be no more than half the Figure mentioned, and is here delineated under Number 11. Near theſe were many remarkable ſmall Figures, ſhining and pellucid, whoſe Apices, or Points, were not ſo acute as thoſe of the large Figures; they are repreſented under 12. I, alſo, ſaw ſome few ſaline Figures larger than the laſt-mentioned, which in their Middle contained another Figure, No. 13. Beyond theſe, in the ſame Place, appeared ſome ſmall pellucid ſaline Figures, whoſe Extremities were plane, (not pointed) No. 14. There were, moreover, ſome very few ſmall Figures, repreſenting the dry Sprags, or ſmall Branches of Trees, as was before obſerved in the ſame Wine but one Year old; which ramous Figures conſiſted of many minute ſaline Figures united, as in the other. Theſe Experiments ſhewed me the Reaſon, not only why *Rheniſh* Wine included in a large Veſſel, filled full, and well ſtopped, will keep many Years without loſing its Strength, but why, alſo, in Proceſs of Time, it loſes its *Rheniſh* or acidiſh Taſte, and acquires a milder and ſweetiſh one; which is, becauſe the ſaline Particles in this Wine come together, and are coagulated; and partly ſubſide to the Bottom, partly adhere to the Sides of the Veſſel; and theſe coagulated Parts we call the Tartar of Wine. Hence it follows, that the older the *Rheniſh* Wine is, the fewer ſaline Particles it contains. In *French* Wines the contrary happens, becauſe the ſaline Particles, as far as I have obſerved, in a full and well-cloſed Veſſel, are leſs concentrated, eſpecially in the Wines imported from *Bourdeaux*, for which Reaſon they never become milder or ſweeter; but in thoſe Wines, which are imported from *Nantes*, the Salts are more congregated, tho' their Sweetneſs, however, goes off at the ſame time.

In *Rheniſh* Wine ſold for *Rhingow*, (tho' I underſtood afterwards, that it was only *Palatine*) of the Growth of the Year 1683. and of a very grateful Taſte, I obſerved at firſt very few ſaline Figures; but after I had ſet it aſide in an open Veſſel for four-and-twenty Hours, I diſcovered Multitudes of ſaline Figures acuminated about both Ends, as in No. 15. many of which had an oblique and tranſverſe Eminence, others were very pellucid. There was, alſo, ſo vaſt and inconceivable a Number of ſaline Figures of the ſame Poſition, that they could by no means be obſerved by Help of that Microſcope, through which all theſe Figures appeared of the ſame Size as you ſee them delineated. I, alſo, met with great Quantities of ſaline Figures, which appeared at firſt Sight, like handſome and well fabricated Wine-hogſheads; but, upon a more accurate Inſpection, I diſcovered that two of their Sides were incurvated, as under No. 16. From theſe Obſervations I learned, that the ſaline Figures, which I had diſcovered in the preceding Wines, and which I ſaid were like Wine-hogſheads, were of one and the ſame Poſition with theſe Figures, and that I had not view'd them on the convolved Side, nor made ſo exquiſite an Obſervation of them, as I did of theſe. Beſides theſe ſaline Figures, which I obſerved to be flat at one or both Ends, all the reſt reſembled the Figures, No. 16, 17. With theſe I ſaw ſmall ſaline Figures, repreſented No. 15. with both their ſharp or acute Ends rolled up, as in No. 17. I obſerved other ſaline Figures, which had only one Side incurvated, as No. 18. Sometimes I took Notice of a ſmall ſaline Figure, reſembling a Pyramid on a quadrilateral Baſe, or a Diamond cut in that Form, No. 19. but there were ſo few of theſe Figures, that ſometimes I could perceive no more than one or two in a Drop of Wine. With theſe I could ſometimes perceive an oblong ſaline Figure, furniſhed in the Middle with another Figure, of the Form juſt mentioned, as you ſee repreſented, alſo, No. 19. I met with the ſame Figures in other Wines, but did not judge them worth recording. Beſides theſe, I often met with ſaline Figures, whoſe Angles, or Apices, about the Contortion, or Incurvation, were not cloſed, and which had a conſpicuous

Aperture

Aperture reaching lengthwiſe, N° 20. tho' many others, which were cloſer, ſeem'd only to have a Mark, diſtinguiſh'd by its Eminence, or Elevation. Sometimes I could, alſo, diſcern ſome little, long, and narrow Figures, as repreſented N° 21. About theſe laſt I began to exerciſe my Speculations, whether they were only the Rudiments, or Materials, of ſome larger Figure to be formed, the Cauſe of whoſe Imperfection conſiſted only in the want of ſufficient Matter to complete thoſe ſaline Particles; for I ſaw but a few of them ſwimming in the Wine, but the greateſt Part lay at the Bottom, when the Wine was in part evaporated: Beſides all the ſaline Particles beforementioned, I diſcovered, in all the Kinds of Wine, an infinite Number of minute and delicate Particles, to which I could aſcribe no other Figure than that of Globules; and their Numbers were ſo great, as to make one believe, that the whole Subſtance of the Wine, except the ſaline Atoms, conſiſted of Globules; and I am perſuaded, that they contribute, chiefly, to the Sweetneſs of the Wine.

I drew a ſmall Quantity of that *Rheniſh-wine* which our People call *Rijn-hauwer Cavelwijn*, from a full Hogſhead, which had fermented almoſt during the whole Summer, and had been drawn off the Lees for ſome Weeks, retaining a good laudable Taſte: I placed this Wine in an open Veſſel, in four different Places of my Summer-room, and in little leſs than an Hour diſcovered in it Multitudes of ſaline Figures; but, after almoſt ſixteen Hours, I diſcerned many Figures of a great Thickneſs, having a Cavity like a Cockboat, ſuch as I had before related that I had ſeen in Vinegar, [ſee ACETUM] and are here repreſented N° 22. I could obſerve, alſo, different Sorts of ſaline Figures, which, about their Centre, repreſented other ſmall, darkiſh, and oblong Figures, ſome of which had two, others three, and others four Circumferences, N° 23. Others, again, were marked with a Line, or Seam, thro' the Centre, N° 24. I ſaw, beſides, ſeveral ſaline Figures, with only one Apex, the other End being obtuſe; the Cauſe of which ſeemed to be, that their conſtituent Particles were not yet complete, as we ſaid before, and, conſequently, neither the Figures themſelves of this Sort, which were only pellucid, and are here repreſented N° 25. I perceived, alſo, a few ſaline Figures, reſembling thoſe under N° 26. And when I inſpected the thinner Parts of the Wine, which had almoſt evaporated, I diſcovered innumerable Multitudes of ſaline Particles, moſt of which had two acute Angles, but were ſo extremely minute, that I cannot but think ten Millions of them, in Conjunction, to be leſs than a Grain of Sand. I, alſo, perceived other Figures ſwimming about, in the Shape of a well-fabricated Wine-hogſhead, as I mentioned before; but tho' I examined theſe laſt ſaline Particles with all the Accuracy I was capable of, I could never diſtinguiſh them by Parts, or Lines; they were, alſo, thinner than all the reſt, and pellucid: I ſaw, afterwards, many oblong, quadrilateral, ſaline Particles, which were, alſo, thin, in the higheſt Degree, and pellucid, as well as extremely minute; and are here repreſented N° 29. but a little too big; the Reaſon of which was, that, with the ſame Microſcope, which diſtinctly exhibited to View the Figures under N° 22, 23, 24, 25, 26, and 28. I could not diſcover thoſe which you ſee under N° 27. 29. and this is the Cauſe that the Proportion could not be obſerved. I perceived, alſo, about the thinner Parts of the Wine, various ramous ſaline Figures, which were again compoſed of other ſaline Figures, ſo extremely minute, that I diſtinguiſh'd the Shapes of but very few of them; others, of the like ramous Kind, conſiſted of ſuch irregular Figures, that I could diſtinguiſh them by no Poſition.

I made the ſame Experiments, as before, upon another Sort of Wine, which our People call *Ceronce-wijn*; and I obſerved moſt of its ſaline Figures to agree with thoſe repreſented under N° 30. ſome of them appearing, as it were, convolved, others very thin and pellucid; others, again, when the Wine had been ſuffered to reſt for ſome time, were become ſo thick, as to ſhew a darkiſh or browniſh Periphery round about, as in *Fig.* N° 31. others there were which made but half N° 30, 31. and are repreſented N° 32. I began, alſo, to examine that Kind of French-wine which we call *Coteau*, and diſcovered in it Multitudes of ſaline Figures, like thoſe N° 30, 31, 32. beſides others whoſe Sides were convolved, as N° 33. and others like Planes, whoſe longeſt Sides were right Lines, and both their Extremities round, N° 34. ſome, alſo, had one acute Angle, as N° 35. I diſcerned, alſo, many ſaline Figures, reſembling, in a very lively manner, a flat-bottom'd Boat turn'd over, N° 36. in others, of the ſame Structure, there appear'd, as it were, a Cavern; near the foremention'd I could diſcern various minute longiſh Figures, as N° 37. which I ſuppoſed, had there been more Matter, would have aſſumed the Figure N° 34. Beſides theſe, I ſaw ſome ſaline Figures in the Form of N° 38.

I made a full Examination and Inſpection, alſo, into that Sort of French-wine which our People call *Touſeeau-wijn*, which was rich, and, at the ſame time, very ſweet, tho' many among us believe the Sweetneſs of this Wine, which it acquires after four Years, not to be natural, but artificial, and procured by means of Sulphur, or the Wine called *Hogeland*, or Honey, or Syrup of Sugarcandy. I obſerved in this Wine all the ſaline Figures which I had diſcovered in the Wine called *Coteau*, bnt in this of *Touſaan* there were not ſo many ſaline Particles as in the other; and there was, beſides, ſome Difference, in that I could diſcern in this Wine of *Touſaan*, at ſeveral Times, ſaline Figures cut, as it were, into Steps, or Degrees, as you ſee repreſented N° 39.

I took, for further Examination, ſome *Touſaan* Wine, accounted the pureſt, and obſerved in it all the ſaline Figures which I ſaid I had diſcovered in the *Coteau* and the *Touſaan*; but I judged the Number of the Figures contained in this laſt, called the *acidiſh Touſaan*, to be twenty-five times as great as thoſe in the ſweet *Touſaan*, but leſſer: Beſides, I could ſee in this laſt, or acidiſh *Touſaan*, the ſaline Figures floating, after a few Hours; but in the ſweet *Touſaan* the ſaline Particles were ſlow in Appearance.

In the Wine called *Citerne* I ſaw all the ſaline Figures which I had obſerved in the *Touſaan* and the *Coteau*, and thoſe very numerous.

I made Inſpections, alſo, into *Hogeland* Wine, of the richeſt Sort, and found but very few Figures floating in it, tho' I had ſet it aſide for three Days and Nights; but theſe Figures were much larger than thoſe in the *Coteau* and the ſweet *Touſaan*; and reſembled thoſe under N° 30, 31, 33, 36.

I made an Infuſion of Tartar of Rheniſh-wine, pulverized in pure Water; and, when the Water was become limpid, I obſerved in it many of the ſaline Figures, which I ſaid I had diſcovered in Wine-vinegar; among them ſome very clear Figures armed with two acute Angles, as in N° 40. but moſt of them were irregular; the Reaſon of which, in my Opinion, was, the want of a Mixture of ſweet or oily Matter, and becauſe the ſaline Parts, eſpecially where was little or no Water, ſeparated and fell off on all Sides.

After this, I took under Examination ſome Tartar, as it was ſaid to be, of French-wine, in the ſame manner as was deſcribed before; and diſcovered in it, alſo, ſome ſaline Figures, which agreed with thoſe of the Wine; but the other Figures were even more irregular than thoſe obſerved in the Rheniſh-wine.

I took ſome of the pureſt Wine of *Orleans*, and with every Drop, as near as I could conjecture, mixed a Bit of Crabs-eye, of the Thickneſs of the Back of a Knife, becauſe the Powder of the ſame hinders a clear View, when put in the Wine: After three Hours I examined it, and could ſee nothing at all, as I may ſay, in the Wine, which had any Reſemblance to ſuch ſaline Figures as I had ſeen in the Wine which had no Crabs-eyes mixed with it: I perceived, alſo, innumerable ſaline Particles with an oblong quadrangular Baſe, and the Sides aſcending pyramidically, and ending in a kind of Ridge, or Back; in others I could only ſee a plain Figure. See both repreſented N° 41. Some were Hexahedra, or Figures with ſix Sides, N° 42. There were, alſo, various ſaline Figures, which had two oblique Sides, N° 43. and a few quadrilateral Figures, containing within them a ſmaller quadrilateral one, as repreſented N° 44. but others of theſe Figures had very ſhort, and, in ſome meaſure, irregular Sides: I, alſo, happened on ſome ſaline Particles of the Figure N° 45. in theſe laſt Particles I could perceive no Gibbolity, or Eminence; which was owing, I ſuppoſe, to their extreme Shortneſs; and when I took a View of a Bit of the Crabs-eyes, I obſerved in, perhaps, fifty Places, a Multitude of ſlender Tubes, proceeding, or formed, as it were, out of an Angle, or Apex, ſhining like Cryſtal, and one longer than another, tho' all nearly of the ſame Thickneſs, N° 46.

In the ſame Quantity of Wine I infuſed white Chalk, and diſpoſed it at four Places together in my Summer-room: When I had ſtayed about a Quarter of an Hour, I inſpected the Wine, and obſerved in it a vaſt Multitude of the above-mentioned ſaline Figures, but much inferior in Bigneſs to thoſe in the Wine with the Crabs-eyes: But when I had left the Wine with the Chalk for twelve or fourteen Hours, I found all the aforeſaid ſaline Figures not only larger, but I perceived in various Places a great Multitude of little Tubes, emerging, as it were, from a Point of the Chalk, and like thoſe repreſented N° 46. but larger, and one thicker than another: And as the Wine which had contained the Crabs-eyes was covered with a Sort of Cuticle, the Cauſe of which I ſuppoſed to be a Kind of Coagulation of the Sweetneſs of the Wine, the contrary happened in the Wine with the Chalk, which was fine, and ſo continued.

Some time after I infuſed in the Wine before-mentioned, commonly called *Rijn-kawer*, *Kavel-wijn*, ſome Bits of Crabs-eyes, and after twelve or fifteen Minutes I found in it ſome few ſaline Figures: But when I had let this Wine ſtand for ſome Hours, I obſerved in it not only a vaſt Number of all the ſaline

Figures repreſented under N° 41, 42, 43, 44, 45, 46. but perceived, alſo, that the Figures which offered themſelves to my firſt Inſpection were increaſed in Magnitude, tho' I could diſcern none of thoſe Figures which are found in the Wine in which no Crabs-eyes are infuſed.

Now ſince it ſo plainly appears, from every one of theſe Experiments, that none of the before-mentioned Rheniſh or French Wines produces any ſaline Figures which have any Affinity or Similitude to the Salt of the Gout commonly called *Calx*; we may, with more Safety, and greater Certainty, affirm, that the Salt of Wine is not inſtrumental in generating the Gout: And the ſame is affirmed by daily Experience. For we may everywhere obſerve Perſons, who are great Drinkers of French and Rheniſh Wines, and yet are never infeſted with the Gout. On the other Hand, we ſee many who never taſted either French or Rheniſh Wine, all their Lives, miſerably afflicted with arthritic Pains and Diſorders. From this Coagulation, or Tranſmutation of ſaline Figures in Wine, we, alſo, confirm thoſe Arguments by which we would prove, that, in a well-conſtituted Body, none of the ſaline Particles of Wine penetrate into the Maſs of Blood, eſpecially ſince we hold, and are well aſſured, that our Stomach and Inteſtines were made for no other Ends than, in the firſt Place, for Contrition of the Aliments: Secondly, For Coagulation of the groſſer Parts: And, thirdly, For the Diſtribution of the moſt ſubtil Part of the Aliments, after they have undergone the Operations of Contrition and Coagulation, into all Parts, for the common Nouriſhment of the Body.

And tho' I am ſenſible that Men of Judgment and Learning are more inclined to embrace and approve a ſingle, good, and uſeful Experiment, than fond of applauding a whole Volume of well-written Speculations, or Ratiocinations, becauſe theſe laſt are the work of the Brain alone; yet I have preſumed frequently to interpoſe my own Thoughts and Reaſonings on the Subject, from a Perſuaſion, if I might have Liberty to judge, that I could draw more Light from my own Obſervations, than it was poſſible for thoſe, who had never ſeen or heard of ſuch Experiments or Matters. *Leeuwenhoeck. Oper.*

Vinum Amarum pro Oenopolis.

Bitter Wine for Vintners.

Take Tops of Centory, twelve Handfuls; Gentian-root ſliced, one Pound; Juniper-berries, one Pound and an half; Sevil Orange outer Peels, and their Juice, Number twelve; Lemon-peels, and Juice, Number ſix: Steep in a Bag, for fourteen or twenty Days, in white Port Wine, twenty Gallons; Canary, four Gallons.

Our common Taverns do not make a Bitter by much ſo good as this; and nothing can be more grateful, wholſome, or eaſier made. But this is to be ſaid, in general, againſt that Whetting, as it is uſually called, in a Morning, which ſome accuſtom themſelves to; for tho' one Glaſs, when the Stomach has, by Debauch, or any other Accident from Diſtemper, been pall'd, or weaken'd, is of Service, by warming its Fibres, and giving them a due Tenſity, in which, principally, conſiſts a good Appetite, and Digeſtion; yet, when the Stomach is, perhaps, already too warm, from a high Diet, and frequent Tippling, this Practice helps to deſtroy the true Senſe and Springyneſs of the Stomach, and, in Proceſs of Time, will diſable it from doing its proper Offices. After a great Debauch, indeed, there is ſomewhat to be ſaid in Favour of the *Engliſh* Proverb, *A Hair of the ſame Dog*; becauſe the undigeſted Remains at the Stomach, and the Quantity of ſlimy Juice which drains into it, during Sleep in the Night, cannot better be got off, than by raiſing it with a ſmall Glaſs or two next Morning; but that ought not to be carried any farther.

Vinum Arthriticum.

Wine againſt the Gout.

Take Sarſaparilla, and Guaiacum, of each an Ounce; Miſletoe of the Oak, ſix Drams; Germander, Ground Pine, and dried Sage, of each three Ounces; Cowſlip-flowers, Flowers of Roſemary, and of Lilies of the Valley, of each half an Ounce; St. John's-wort, ſix Drams; White-wine, five Quarts.

Theſe are ordered to ſtand in Maceration three or four Days, and then the Wine to be ſtrained for Uſe, and two Ounces drank twice a Day, for forty Days together. Its Title denotes its principal Intention to be againſt the Gout; beſides which, it is, alſo, recommended for all nervous Weakneſſes, and Decays from cold pituitous Humours, and the Rheums of Age, and ſaid to warm and invigorate the whole nervous Syſtem.

Vinum Arthriticum alterum.

Another Wine againſt the Gout.

Take Guaiacum, two Ounces; yellow Sanders, one Ounce; Cinnamon, *Spaniſh* Angelica-root, *Calamus Aromaticus*, of each two Drams; the outer Peels of Oranges dried, one Ounce; Flowers of Roſemary, Lavender, and Tops of Marjoram, of each half an Ounce; Germander, Sage, and Ground-pine, picked from all the Stalks, and dried, of each two Ounces; the leſſer Cardamoms, two Drams: Bruiſe all into a groſs Powder, and infuſe in three Gallons of Mountain-wine, for two or three Weeks; and then ſtrain, and bottle cloſe, for Uſe.

This is an admirable warm Reſtorative in all nervous Decays, and cannot miſs of Succeſs, if continued for ſome time: For about two Ounces, or a common Wine-glaſs, taken two or three times a Day, will raiſe the moſt languiſhing Conſtitution, and preſerve it againſt all Diſorders of the Head and Joints, ariſing from nervous Decays. In moſt hydropic Habits, alſo, Medicines of this Kind are of great Service, as they not only help to abſorb and evacuate all ſuperfluous Humidities, but, alſo, to fortify the Solids, ſo as to prevent, by a briſk Circulation and Digeſtion, their future Increaſe.

Vinum Arthriticum purgans.

A purging Wine, againſt the Gout.

Take China, and Sarſaparilla, of each two Ounces; Polypody, three Ounces; Rhubarb, and Sena, of each one Ounce; Hog-lice, ſix Drams: Cloves, one Dram; White-wine, three Quarts: Infuſe, and ſtrain, *f. a.*

This is not a very judicious Preſcription: For the China and Sarſaparilla are of no Uſe in it, whatſoever their Virtues may be elſewhere, which are much ſuſpected; becauſe the cathartic Ingredients carry them downwards without having any Effect, the Bowels not being a proper Scene of Action for Alteratives, and Things of that Tribe.

Vinum Arthriticum Purgans alterum.

Another purging Wine againſt the Gout.

Take Turpeth, Hermodactyls, of each two Ounces; Jalap, and black Hellebore, of each one Ounce; Cinnamon, two Drams; Ginger, half an Ounce; Lavender-flowers, one Ounce: Infuſe in two Quarts of ſtrong White-wine, in a Veſſel well ſtopped for fourteen Days; then ſtrain for Uſe.

This is a moſt pleaſant and excellent Purge for all Diſtempers that have their Seat in the remote Parts, and nervous Cells. It is beſt to be taken over Night, in ſuch ſmall Doſes as will not work off before Morning; becauſe all of this Intention ought to paſs into the Blood, and exert themſelves much beyond the firſt Paſſages, elſe they can do little good: By ſleeping, therefore, upon them, they better ſoak thro' the Lacteals, and, as it were, tranſpire into the moſt minute Receſſes, where they are moſt fitted for Operation. The Patient may begin with three or four Spoonfuls, and increaſe the Quantity at Diſcretion; but it ought to be often repeated: For the Matter to be worked upon hereby is too remote, and cloſely lodged, to give way to a little Force: And a frequent Repetition hereof cannot but greatly cut off, as well as take away the Supply of thoſe Humours which lodge upon the Joints, and do ſo much Miſchief. So that, with Care, that dreadful Affliction, the Gout, may herewith be, in a great meaſure, kept off. And, in theſe Caſes, Medicines of this Intention operate with much more Efficacy and Certainty upon the deſtined Humours, than when they are given in dry Forms; becauſe the Subtilty of the Menſtruum, by which their Virtues are extracted, conduces prodigiouſly to convey them to the proper Scene of Action, which they could never ſo well arrive at by any other Management.

Vinum Benedictum.

The Bleſſed Wine.

Take of *Crocus Metallorum*, one Ounce; Mace, one Dram; Canary, one Pint and an half: Let them ſtand ſeveral Days in Infuſion, and pour off the Wine, as it is uſed.

This has been a celebrated Emetic, but is now almoſt out of Uſe, for its Roughneſs. Its Doſe is from two Drams to one Ounce. If its Uſe is at all juſtifiable, it is in apoplectic Caſes, where ſome Violence is wanting, and the Shock upon the Nerves

cannot

cannot be too great; and for ſuch Purpoſes it is yet ſomewhat retained in the preſent Practice.

Vinum Chalybeatum.

Steel Wine.

Take Filings of Steel, one Ounce; Saffron, in Powder, two Drams; Mountain-wine, one Pint: Let them ſtand in Infuſion three Days; frequently ſhaking them, and then filtre and keep for Uſe.

This is an admirably good Medicine in the Green Sickneſs, where Chalybeates are proper; it, alſo, wonderfully conduces, with Bitters, to remove all ill Habits that proceed from obſtructed Viſcera; and nothing is preferable to it in the Jaundice. It may be taken from two to four Ounces, once or twice a Day, when the Stomach is moſt empty: And the more Exerciſe is uſed with it, the more Good will it do.

Another Steel Wine.

Take of the Filings of Iron, eight Ounces; Roots of Eryngo, Elecampane, of each one Ounce and an half; yellow Sanders, one Ounce; Raſpings of Ivory, red Coral, in Powder, of each ſix Drams; Cloves, Mace, Cinnamon, Ginger, of each three Drams; Ceterach, Flowers of Roſemary, of Broom, Epithymum, of each two Pugils; White-wine, three Quarts: Digeſt all together ſix or eight Days, and then filtre for Uſe.

It is good in all Uterine Obſtructions; as, alſo, in Cachexies, and Foulneſſes of the Liver and Spleen; but as, at the beſt, it is no elegant Compoſition; we ſhall therefore, in its room, ſubſtitute the following *Steel Wine*, which is, alſo, eaſier made.

Take Filings of Steel, four Ounces; Rue, Penyroyal, of each two Handfuls; Peony, and Caſſummunair Roots, of each one Ounce; Saffron, two Drams: Infuſe in two Quarts of Sherry, for fourteen Days, and then filter for Uſe.

This makes not an irkſome Remedy, farther than what the ruſty Taſte of the Steel will give it; and it wonderfully promotes the menſtrual Diſcharges; and of all that obſtructs and raiſes Diſorders in the Womb: For which Reaſon many Kinds of Fits and Convulſions are removed by it; and after a continued Uſe of it ſome time, it ſo cleanſes the Organs of Generation, and fortifies the Tone of the Blood, that it wonderfully diſpoſes to Conception; but then it is by all means to be left off, leſt it deſtroys what it has been ſo inſtrumental in procuring. The Quantity of two or three Ounces, twice every Day, is ſufficient, if continued ſome Weeks.

Vinum Chalybeatum Reſtaurativum.

Reſtorative Steel Wine.

Take clean Filings of Needles, two Ounces; the Juice of eight ſour Oranges: Let them ſtand twenty-four Hours, then add White-wine, two Quarts; Cinnamon, half an Ounce; Cloves, two Drams; Mace, four Scruples. After ſome Days Digeſtion cold, ſtrain, and filtre for Uſe.

This is a very ſerviceable Compoſition for many Purpoſes, and will infallibly cure a Green Sickneſs, or any Tendency of the Conſtitution that Way; which is manifeſt from a pale Complexion, Debility, or Liſtleſſneſs to Action, and ſhort Breath. In hypochondriacal Melancholy, and all Affections of the Spleen, it will do much good; and, after Fevers, or any Diſtemper that ſpoils the Juices, this will greatly again reſtore them to their due Warmth and Vigour; and is much better than any of the mineral Steel Waters, how much ſoever they ſtand recommended in all ſuch Caſes: For the Spices, in this, warm and ſtrengthen the Fibres of the Stomach, which otherwiſe would not ſo well receive and bear the Twitches and Corrugations of the Iron, without Ejectment by Vomiting. It may be given from two to three Ounces, every Morning and Afternoon, when the Stomach is moſt empty.

Vinum Chalybeatum Reſtaurativum alterum.

Another Reſtorative Steel Wine.

Take Filings of Iron, two Ounces; ſqueeze upon them the Juice of three or four *Seville* Oranges, and one Lemon: After twenty-four Hours ſtanding together, and being ſometimes ſtirred, pour upon the Mixture, in a Glaſs Bottle, two Quarts of White *Port* Wine, and one Pint of *Canary*; in which infuſe the Ingredients of the Viper-wine, in proper Proportion, or ſo much of the Viper-wine itſelf, without the Sweets. After fourteen Days ſtrain for Uſe.

This is a noble Medicine to recruit with, after the Conſtitution has been almoſt torn to-pieces with the Fury of a Fever, or any acute Diſeaſes; and particularly for Women who have much ſuffered in Child-bed, and are reduced almoſt to a Conſumption: For this will not only promote the neceſſary Cleanſings, but, alſo, raiſe the Blood with new Warmth and Nouriſhment. This indeed is an expenſive Medicine; but, then, it may be conſidered, that its wonderful Efficacy makes ſome Amends; for two Ounces, twice in a Day, will certainly, in a little time, be attended with Amendment, in the moſt languiſhing Circumſtances.

Vinum Enulatum.

Elecampane Wine.

Take green Elecampane-root, white Sugar, and Currants cut ſmall, of each four Ounces: Infuſe them fourteen Days cold, in two Quarts of White *Port*.

This is an eaſy Liquor both to make and take, and will do Service in ſuch who have weak Lungs, which are often ſubject to be ſtuffed with Phlegm, which it deterges, and prevents Ulcerations, and ſuch Injuries as would bring on a Conſumption. All aſthmatic Perſons, therefore, would do well to uſe this in Plenty, eſpecially in the Winter-time, when the external Cold leſſening the Quantity of perſpirable Matter, by the Pores of the Skin, cauſes a much greater Preſſure of the Fluids upon the Viſcera, of which the Lungs have their Share, and, therefore, ſtand in need of ſuch gentle Fortifiers and Cleanſers as this makes. The Elicampane has, alſo, that deterſive Power by which it keeps open other Viſcera; whence they better perform their Offices, and leave leſs Force to protrude upon the Lungs. It is therefore of Uſe in all Cachexies, and Tendencies towards a Dropſy. Some, alſo, will have there to be a Property in this of deſtroying Worms. Drink a Glaſs of it twice a Day.

Vinum Hippocraticum. See Claretum.

Vinum Hydropicum.

Wine againſt the Dropſy.

Take blue Flower-de-Luce Root, one Ounce; Elecampane, and Squills prepared, of each half an Ounce; Horehound, one Handful; Bark of Elder-roots, and Dwarf-elder, of each one Ounce; Sena, one Ounce and an half; Agaric, two Drams; Ginger, one Dram; White-wine, two Quarts: Infuſe all for fourteen Days, and then ſtrain for Uſe.

Or thus:

Take Aſhes of Broom, and Juniper, of each one Ounce; *Rheniſh* Wine, three Pints: Mix, and make a Lixivium; to which add, blue Flower-de-Luce Roots, one Ounce and an half; the inner Bark of Elder-root, and Dwarf-elder, of each one Ounce; Bark of Bitter-ſweet, half an Ounce; Rhubarb, two Drams; Mechoacan, half an Ounce; Sena, one Ounce; Caraway-ſeeds, ſix Drams; Bark of Saſſafras, and Winter Cinnamon, of each four Scruples: Infuſe warm for twelve Hours; then ſtrain, and add white Sugar, four Ounces; Damaſk Roſe-leaves, two Handfuls: After due Infuſion, ſtrain again for Uſe.

If the Sena be left out, it is a better Diuretic; for the leſs it goes off by Stool, the more will it get into the Blood, and diſcharge its ſerous Parts by Urine. It is therefore deſigned for hydropic Conſtitutions, and will do Service where there is a Tendency that Way, if begun with in time, and cloſely followed. The Doſe is three Ounces every Morning faſting.

Vinum Ictericum.

Wine againſt the Jaundice.

Take Turmeric, in groſs Powder, two Ounces; Saffron, two Scruples; Cochineal, four Scruples; Millepedes, N° 320; Canary, one Quart: Infuſe all for ſix or ſeven Days; then ſtrain for Uſe.

It is very good for what its Title expreſſes, and may be drank two Ounces, three or four times in a Day; but the following we recommend as the moſt efficacious.

Vinum Millepedum.

Hog-lice Wine.

Take Hog-lice, half a Pound: Put them alive into one Quart of White *Port* Wine; and after ſome Days Infuſion,

ſion, ſtrain and preſs out very hard: Then put Saffron, two Drams; Salt of Steel, one Dram; and Salt of Amber, two Scruples; and after three or four Days ſtrain, and filtre for Uſe.

This is an admirable Medicine againſt the Jaundice, Dropſy, or any cachectic Habit: It greatly deterges all the Viſcera, and throws off a great deal of ſuperfluous Humours by Urine. It may be given twice a Day, two Ounces at a time.

Another VINUM MILLEPEDUM.

Take four Ounces, or a Quarter of a Pint of Millepedes alive: Infuſe them in one Quart of White-wine, with one Dram of *Engliſh* Saffron; ſhake them often, and let them ſtand two or three Weeks, then filtre the Wine for Uſe.

It is an admirable Cleanſer of all the Viſcera; and gives Place to nothing in a Jaundice; or any Obſtructions of the Kidneys, or Urinary Paſſages: Which makes it a great Pity, that it is not more in Uſe; for there is hardly any chronic Diſtemper wherein it will not do Service; and even in ſcrophulous and ſtrumous Swellings, a Courſe of it will greatly waſte them, if not quite carry them away: And in Defluxions of Rheum upon the Eyes, it will do Wonders, by turning downwards thoſe hot Salts, by their natural Outlets, the Kidneys, which had forced their Way through the Glands about the Eyes. It may be given from half an Ounce to two Ounces in a Doſe.

VINUM MIRABILE.

The Wonderful Wine.

Take Cloves, Mace, Nutmegs, Cubebs, Cardamoms, Galangals, Cochineal, Saffron, of each one Dram: Infuſe in one Quart of *Canary*, and Spirit of Cinnamon, four Ounces, for fourteen Days; then ſtrain for Uſe.

This makes a better Cordial than the *Aqua Mirabilis* of the College, without Diſtillation; which will yet be much higher, if Ambergriſe or Muſk be added. A Dram of it now-and-then, in moiſt cold Conſtitutions, is of good Service; for it warms, and prevents the Blood from running into thoſe Rheums, and pituitous Juices, which ſtuff up the principal Parts of the Machine, and obſtruct them in their Offices; occaſioning Lethargies, Apoplexies, Palſies, Rheumatiſms, and all that Train which are the frequent Attendants upon a declining Age, when the Vigour of Youth begins to wear off. But in choleric and ſanguine Conſtitutions, ſuch Cardiacs as theſe are highly to be condemned, becauſe they inflame the Blood, and do much Miſchief that way; the contrary Regimen, ſuch as Acids and Diluters, being there more neceſſary.

VINUM PECTORALE.

Pectoral Wine.

Take Juice of Liquorice, one Ounce; Saffron, one Scruple; Seeds of Coriander, Caraway, Aniſe, of each two Drams; Salt of Tartar, half an Ounce; Penyroyal, and Hyſſop-waters, of each four Ounces; *Canary*, one Quart: Let them all digeſt cold for ſome Days: Then ſtrain for Uſe.

This aſſiſts in Expectoration, and helps to deterge and cleanſe the Glands of the Bronchia, and neighbouring Parts: This may be drank two or three times a Day, or almoſt at Pleaſure: Warm is the beſt.

VINUM SCELOTYRBICUM.

Wine againſt the Scurvy.

Take Sorrel, Brook-lime, and Water-creſſes, Garden Scurvy-graſs, of each three Handfuls; Roots of Elecampane, blue Flower-de-Luce, Horſe-radiſh, of each one Ounce and an half; Seeds of Scurvy-graſs, one Ounce; White-wine, two Quarts: Let all digeſt two Days together, and then preſs out hard for Settling and Uſe.

A Wine Glaſs of it may be drank twice a Day, for ſome Weeks together, and will do good in any ſcorbutic Diſpoſition: Theſe kind of Medicines, uſed in the Spring, may be a Means to prevent many from falling into Fevers in the Summer-time, becauſe they rince the principal Emunctories, and waſh off ſuch beginning Obſtructions, as lay a Foundation for Fevers.

VINUM SCILLITICUM. See SCILLA.

VINUM SCORBUTICUM.

Wine againſt the Scurvy.

Take Garden Scurvy-graſs (gathered dry and unbruiſed) one Handful; Horſe-radiſh Root ſcraped, half an Ounce; Winters-bark, groſsly powder'd, two Drams; Arum-water, and White-wine, of each one Pint: Infuſe them cold for three Days.

The Whole makes a warm biting Medicine, and a good Antiſcorbutic: It helps to diſſolve ſizy and viſcid Humours, which entangle the Salts, and ſtick with them in the ſecretory Orifices, whereby they are eroded; eſpecially the ſmall ones upon the Skin. It quickens the Motions of the Fluids, and promotes the thinner Secretion; whence, in Dropſies, and all Cachexies from ſluggiſh watry Humours, it will be of good Service. It may be drank at Diſcretion.

VINUM STOMACHICUM.

Stomach Wine.

Take Roots of *Virginia* Snakeweed, and Gentian, of each three Drams; Galangal, Cloves, Cubebs, Mace, Nutmegs, Saffron, of each one Dram; Cochineal, half a Dram; *Canary*, three Pints: Infuſe for ſome Days, and then ſtrain for Uſe.

This is a warm Compoſition, and may be of Service to cold Stomachs, and ſuch as are troubled with Wind and Flatulencies: But it is too hot for many, and will be ſubject to breed Choler, and aduſt Humours; wherefore we prefer the following Stomach Wine.

Take of Gentian-root, half an Ounce, Galangal, Calamus Aromaticus, *Spaniſh* Angelica-root, of each two Drams; Centory-tops, one Ounce; the outer Peel of three *Seville* Oranges, with their Juice; Saffron, one Dram: Infuſe in two Quarts of Sherry for fourteen Days, ſhaking the Veſſel often; then ſtrain and filtre for Uſe.

This is a moſt grateful Stomachic, and greatly mends a bad Appetite: It is a wonderful Help to cold Conſtitutions, and ſuch as are inclining to Dropſies and Cachexies from Corpulency. The acid Juice of the Oranges mightily takes off both the Heat and Taſte of the Bitters; and the Whole is worth every one's keeping in Readineſs by them, to uſe upon Occaſion, in any ſudden Diſorders of the Stomach, from Intemperance, or any other Cauſe. It may be drank twice or three times a Day: When the Stomach is moſt empty it is the beſt.

VINUM VIPERINUM.

Viper Wine.

Take of dried Vipers, cut into Pieces, N° ſix: Digeſt them three Days, with a gentle Heat, in one Quart of *Canary*, and then ſtrain out the Wine for Uſe.

Another VINUM VIPERINUM.

Take live Female Vipers in the Spring-time, N° ſix: Put them alive into three Quarts of *Canary*; and let them ſtand cloſe ſtopt, without any Heat, for ſix Months.

It is a wonderful Reſtorative, and greatly invigorates the whole Conſtitution, ſo as to provoke much to Venery, as well as other Actions of Vigour; but it much more contributes to this latter Purpoſe, if it be warmed with ſome Aromatics, eſpecially the Sweets, as Muſk and Ambergriſe. It is almoſt an infallible Remedy in cutaneous Eruptions, and even in a confirmed Leproſy.

Another VIPER WINE.

Take Vipers, N° twelve; fine picked Flowers of Lavender, and Roſemary, green, of each four Ounces; ſix Nutmegs; Satyrion-root, half a Pound, ſliced ſmall; Gum-Benjamin, and Storax, of each two Ounces; Muſk, and Ambergriſe, of each half a Dram: Put all together, the Vipers alive, and the reſt as freſh as can be got, into ſix Quarts of *Canary*; and after three or four Months Maceration, and ſometimes in the Warmth of the Sun, but cloſe covered: Strain the Wine, and let it ſettle fine, which decant for Uſe.

This is, perhaps, as ſtimulating a Reſtorative as Medicine can produce; and, in the laſt Decays of Life, will ſtill ſupply the vital Lamp with ſome Recruits. It is an admirable Remedy for thoſe who have been almoſt wore out with Venereal Engagements;

Engagements, eſpecially if their Pleaſures have been purchaſed at the Expence of a few Salivations, or a frequent Uſe of Mercurial Medicines; and it will revive any Conſtitution that is not quite mouldered into Rottenneſs. But they much beſt deſerve ſuch a Reſtorative, who by acute Diſeaſes, as malignant Fevers, Small Pox, or the like, have been ſo broke, or ſhattered, in their Conſtitutions, as hardly to be within a Poſſibility of Recovery: For in ſuch, it will to Admiration, repair the decay'd Juices, and fill again the Veins with a warm, generous, nutritive Blood. In ſcrophulous Habits, alſo, which are frequently leaning towards Conſumptions, it will do great Service. And where youngPerſons are not ſo early happy in their conjugal Embraces as ſome wiſh to be, and it be ſuſpected from a Coldneſs, or Inſufficiency upon that Account on either Side, the Uſe of this cannot fail to render their Intercourſe prolific: But the Uſe of it is warily to be indulged, leſt with it be kindled an Heat, which reaſonable Coition cannot aſſwage. And let ſuch, alſo, who indulge themſelves too laviſhly in thoſe Enjoyments, be careful how they prompt with ſuch Helps, leſt *they run off their Strength and Life too precipitately*; for the beſt Conſtitutions in the World wear out, and ſink under the frequent Repetition of ſuch Profuſion; as the frequent ſtraining any elaſtic Body whatſoever will weaken more and more its Spring, till it is quite loſt, notwithſtanding all the Helps of Art to preſerve it.

VIOLA.

The Characters are;

The Leaves are alternate; the Calyx is quinquefid, expanded, firm, and has its Segments reflexed backwards. The Flower is pentapetalous, and anomalous, as conſiſting of a dipetalous Standard, two Wings, and a Tail repreſenting a Keel; it is furniſhed with five Stamina. The Ovary in the Bottom of the Calyx, becomes a conic, triangular Fruit, which burſts aſunder into three Keels, unfolding themſelves into a Circle, and full of Multitudes of round Seeds.

Boerhaave mentions eighteen Sorts of *Viola*; which are,

1. Viola Martia; purpurea; flore ſimplici, odoro. *C. B. P.* 199. *Tourn. Inſt.* 419. *Boerh. Ind. A.* 243. *Viola.* Offic. *Viola Martia purpurea.* J. B. 2. 542. Raii Hiſt. 2. 1049. Synop. 3. 364. *Viola nigra ſive purpurea.* Ger. 699. Emac. 850. *Viola ſimplex Martia.* Park. Parad. 282. PURPLE VIOLETS.

The ordinary purple Violet has a thick fibrous Root, ſending forth long, creeping Strings, which again take Root, and increaſe. The Leaves grow on pretty long Foot-ſtalks, ſomewhat hairy, and in Shape of an Heart inverſed, being hollowed next the Stalk, and indented about the Edges. The Flowers ſtand on ſlender Foot ſtalks, of an irregular Form, conſiſting of five ſweet-ſmelling purple Leaves, with an Hood, or Heel, of the ſame Colour. The Seed-veſſels are long, of an hexagonal Figure, when ripe, burſting into three Parts, containing Rows of round brown Seed.

Violets are found frequently wild in the Hedges, flowering in *March*, though what are made uſe of in the Shops, are cultivated in Gardens. The Flowers, which are principally uſed, are one of the Four cordial Flowers.

They are cooling, moiſtening, and laxative, good in Affections of the Breaſt and Lungs, helping Coughs, and pleuritic Pains. The Syrup is given to Children to open and cool their Bodies. The Leaves are cooling and opening, and frequently put into Clyſters, as well as into Ointments, againſt Inflammations. The Seed is reckoned good for the Stone and Gravel.

Officinal Preparations are only the *Syrupus Violarum. Miller's Bot. Off.*

The Root of this Plant is a little ſaltiſh, glutinous, and deterſive; neither it, nor the Leaves, which are inſipid, and pretty glutinous, give any Tincture of Red to the blue Paper; the freſh Seeds give it a little, and are ſalter than the Roots. There is a glutinous Sap in the Violets, which clogs the other Principles, and hinders their Motion: For,

By the chymical Analyſis, we obtain from this Plant ſeveral acid Liquors, a great deal of Oil, a pretty deal of volatile, concrete, and fixed lixivial Salt.

Thus it is no Wonder, that it ſhould leniſy by its Phlegm and Oil, and be diuretic and laxative, by the Mixture of the other Principles. The Salt of the Violet partakes of the Nature of the Sal Ammoniac, in that it is compoſed of an urinous Part. The Infuſion of two Ounces of the Root of this Plant purges upwards and downwards. Some preſcribe it to three Ounces, and add twenty Grains of Salt of Wormwood, to draw a ſtrong Tincture from it. The Leaves are emollient and laxative; they are continually uſed in Clyſters, Fomentations, and Cataplaſms. The Flowers looſen the Belly: *Poterius* affirms, that a Dram of their Powder purges well enough: There are three Sorts of Syrup prepared with theſe Flowers; the ſimple, which has a very fine Colour, provided it does not boil; the Compound, which is the Invention of *Meſue*; and, the Purgative, of which M. *Lemery* has given the Deſcription: The Simple and the Compound are very good for the Diſeaſes of the Breaſt, occaſioned by acrid and ſaltiſh Humours.

The Purgative Syrup of Violets is good, alſo, for the ſame Diſeaſes, when it is neceſſary to purge; for the Seeds and Empalements of the Flowers, which are uſed to make this Syrup, are very purgative; the Roots, alſo, might be added. *Ettmuller* relates, that *Timæus* prepared an excellent laxative Conſerve with Violets, by giving the Conſiſtence of a Conſerve to Manna, with the Juice of theſe Flowers: This Conſerve keeps the Belly open, if taken from two Drams to half an Ounce.

There is an excellent Sort of Cordial made after the following Manner, which is very good for thoſe that are uſually bound:

> In ſix Pounds of the Juice of Flowers of Violets not picked, dilute over a clear gentle Fire, one Pound and an half of Manna; ſtrain it all thro' a Cloth; and add a Pint of very good Spirit of Wine: Take a Spoonful or two of it Morning and Evening, if it is neceſſary.

The following Emulſion is prepared for the Nephritic Colic, and Retention of Urine:

> Grind an Ounce, or an Ounce and half of Violet-ſeeds in a Marble Mortar, adding, by Degrees, ſix Ounces of the Water of Dogs-graſs: Strain the Emulſion through a Cloth, and dilute in it one Ounce of Syrup of Violets. *Martyn's Tournefort.*

In the ſweet-ſcented Violet, as well as in many other Plants, there are ſeveral Parts, which have their diſtinct Virtues: For the Root, Umbilicus, and Seed, are of a cathartic Quality; and three Ounces of the Root cut in Slices, and put into boiling Water juſt removed from the Fire, or infuſed a Night in Wine, communicate to them a purgative Virtue. The Seed pulverized, and a Dram and half thereof mixed in any Liquor, has the ſame Effect. The Umbilicus is much weaker, and communicates the ſame Quality to the Water in which it is infuſed; from whence they prepare what they call *Syrup of Violets by Infuſion.* They purge bilious and ſerous Humours, which are not very ſtubborn.

The Leaves abound in a coldiſh and watry Subſtance; whence they mitigate a Phlegmon, and cool the immoderate Heat affecting the Stomach or Eyes; and, eaten among Greens, looſen the Belly.

The freſh Flowers refrigerate, moiſten, mollify, and render the Belly ſoluble; they are in the Number of the Four celebrated cordial Flowers, and a Pectoral. Their principal Uſes are in mitigating the violent Heat in Fevers, and the Pain of the Head thence proceeding, in Coughs, Aſperities of the Throat, and the Pleuriſy. The Syrup of the Flowers is very frequently preſcribed to allay Thirſt in Fevers, and gently to looſen the Belly.

The Seed of Violets is an excellent Lithontriptic, and was one of the Secrets of Dr. *Butler*, formerly a very celebrated Phyſician of *Cambridge*.

Dioſcorides and *Pliny* aſſert, that the purple Part of the Flower, taken in Water, cures the Quinſey, and the Epilepſy, eſpecially in Children. As to the Epilepſy, ſays *P. Renealmus*, we are taught by Experience, that it is an Impoſture; but he had better, and with more Decency, have ſaid, that the Writings of the Antients have not been tranſmitted to us without Corruptions. *Raii Hiſt. Plant.*

2. Viola Martia; multiplici flore. *C. B. P.* 199.
3. Viola Martia; alba. *C. B. P.* 199.
4. Viola Martia; flore multiplici, candido. *C. B. P.* 199.
5. Viola Martia; major; hirſuta; inodora. *M. H.* 2. 475.
6. Viola Martia; folio elegantèr variegato; flore purpureo.
7. Viola Martia; inodora; ſylveſtris. *C. B. P.* 199. *M. H.* 2. 474.
8. Viola Alpina; folio in plures Lacinias diſſecto. *C. B. P.* 199.
9. Viola Martia; arboreſcens; purpurea. *C. B. P.* 199. *Jacea tricolor, ſurrectis caulibus, quibuſdam arborea dicta.* J. B. 3. 547.
10. Viola; montana; lutea; glandiflora. *C. B. P.* 200. *M. H.* 2. 476. *Jaceæ tricoloris genus, flore luteo, magno, repens; non annuum.* J. B. 3. 548.
11. Viola; tricolor; hortenſis; repens. *C. B. P.* 199. *Tourn. Inſt.* 420. *Boerh. Ind. A.* 244. *Viola tricolor.* Offic. Ger. 703. Emac. 854. Raii Hiſt. 2. 1052. Synop. 365.

Viola tricolor major & vulgaris. Park. Theat. 756. *Jacea.* Schrod. Pharm. 4. 84. *Jacea tricolor ſive Trinitatis Flos.* J. B. 3. 546. HEARTS-EASE.

This does not creep ſo much as the common Violets, but grows more erect, having roundiſh crenated Leaves ſet alternately on the Stalks, with two ſmaller and more jagged one, ſet on by them, without Foot-ſtalks. Among theſe ariſe the Flowers on long Stalks, in Shape of the common Violet; but, having the Leaves more erect and open, but differ from them in their Colour, ſome having the two upper Leaves of a full Yellow, with a purple Spot on each; the two Middle of a paler Yellow, with a deep Yellow in each; and the lower Leaf of a Velvet-purple, in ſome Plants, having more of the Yellow, in others more of the Purple, the many Varieties rendering it very beautiful. The Seed-veſſel is longer than the Purple Violet, but full of the like Seed: It is found wild ſometimes in the Borders of Fields, and is frequently planted in Gardens, flowering a good Part of the Summer.

The Leaves only are uſed, though but ſeldom: Yet they are accounted mucilaginous and vulnerary, good to take off the Gripes in Children, and to prevent Fits ariſing from thence. *Miller's Bot. Off.*

It grows in the Northern Parts of *England* among the Corn, and by Walls, and Banks of Hedges, ſpontaneouſly; but the Beauty and Variety of its Flowers have occaſioned its being tranſplanted and cultivated in Gardens. It is ſuppoſed to have the ſame Virtues with the common purple Violet. *Ray. Dale.*

Dr. *Baynard* ſays, that many have been cured of Madneſs by the Uſe of the *Viola Tricolor.*

12. Eadem (11.); flore albo, & luteo.

13. Eadem (11.); flore pallide cæruleo, purpureo, & luteo. *Flos Trinitatis, major, violaceus.* H. Eyſt. Æſt. o. 12. *F.* 6. *F.* 2.

14. Eadem (11.); flore violaceo, holoſerico, purpureo, & aureo.

15. Eadem (11.); flore magno, duplo majore, coloris unius, purpureo, holoſerico.

16. Eadem (11.); flore pallido. *Flos Trinitatis, pallidus, major.* H. Eyſt. Æſt. o. 12. *F.* 6. *F.* 3.

17. Eadem (11.); flore ex aureo & pallido.

18. Viola; bicolor; arvenſis. *C. B. P.* 200. *M. H.* 2. 476. *Jacea, bicolor, frugum & hortorum vitium.* J. B. 3. 548. *Boerh. Ind. alt. Plant.*

Viola is by Diminution from the *Greek*, ἰον, (*Ion*) the *Spiritus lenis*, being converted into the Letter *V*, as in abundance of Inſtances. *Ray.*

The firſt ſix Species are officinal, pectoral, and cordial, and proper in Coughs, Dryneſs of the Tongue, and Aſperities of the Fauces, as, alſo, in Catarrhs, Phthiſis, and the Pleuriſy. The Flowers have an anodyne, demulcent, and antiphlogiſtic Virtue; they are infuſed in the pureſt Rain-water, from whence, by often repeating the ſame, is prepare the incomparable what they call *Syrupus Violarum ſine Coctione*, "Syrup of Violets "without boiling," by adding four times the Weight of Sugar. This Syrup is very palatable, gently opening, corrects every thing acrimonious, and looſens the Belly. The Leaves have much the ſame Virtues as thoſe of *Acanthus.* The Flowers, which are ranked with the Four Cardiac Sorts, as well on account of their grateful Smell, or pleaſing volatile Spice, as the fine Viſcoſity of their Particles, which diſſolve and lenify whatever is earthy and rigid, are to be gathered in the Morning while the Dew is upon them. The Leaves are emollient and laxative, and uſed in Fomentations, Cataplaſms, and Clyſters. The Seeds are ſeldom uſed, except in Obſtructions of the Kidneys, and the nephritic Colic. The Root purges upwards and downwards; the Calyces, which have a naſeating Quality, are to be rejected, unleſs you would have a pretty laxative Medicine; for then the Calyces are to be taken with the Flowers; the Seeds are potent Hydragogues. *Hiſt. Plant. adſcript. Barbaro.*

VIOLA AQUATICA, *aquatilis*, or *paluſtris.* Names given to the HOTTONIA; which ſee.

VIOLA HYEMALIS. A Name for the *Heſperis*; *hortenſis*; *flore*; *purpureo*; and for the *Heſperis*; *hortenſis*; *flore candido.*

VIOLA INDICA, SCANDENS. A Name for the *Acriviola*, and for the *Acriviola*; *maxima*; *adorata.*

VIOLA LUNARIA, or LUNARIS. Names given to ſeveral Sorts of LUNARIA; which ſee.

VIOLA MARIANA. Offic. Ger. 362. Emac. 447. *Viola Mariana flore purpureo.* Park. Parad. 354. *Viola Mariana Dodonæi, quibuſdam Medium.* J. B. 2. 804. *Campanula hortenſis folio & flore oblongo.* C. B. P. 94. Raii Hiſt. 1. 732. Boerh. Ind. A. 249. Tourn. Inſt. 109. COVENTRY BELLS.

In foreign Countries this grows in Hedges, and on mountainous Places; but, with us, is only cultivated in Gardens. The Root, which is ſeldom uſed in Medicine, is, as a Food, eſteemed refrigerating, drying, and aſtringent. *Dale.*

VIOLA MATRONALIS. A Name for ſeveral Sorts of HESPERIS; which ſee.

VIPERA. The Viper, or, as it is commonly called by the Vulgar, the Adder.

With reſpect to the Virtues of this Animal, one of the firſt, whom we find in Antiquity to have made uſe of the Fleſh of this Creature to medicinal Purpoſes was, I think, *Antonius Muſa*, the famous Phyſician to *Octavius Cæſar*; of whom *Pliny* tells us, that when he met with incurable Ulcers, he ordered the eating of Vipers; and, by this means, they were quickly healed.

It is not improbable, that he might have learned this from the great *Greek* Phyſician *Craterus*, mentioned often by *Cicero*, in his Epiſtles to *Atticus*; who, as *Porphyrius* relates, very happily cured a very miſerable Slave, whoſe Skin in a ſtrange manner fell off from his Bones, by adviſing him to feed upon Vipers, dreſſed after the manner of Fiſh.

Be this as it will, in *Galen's* time, the profitable Qualities of the Viper were very commonly known, himſelf relating very remarkable Stories of the Cures of the *Elephantiaſis*, or *Lepra*, done by the Viper-wine.

Aretæus, who moſt probably lived about the ſame Time with *Galen*, and, of all the Antients, has moſt accurately deſcribed the *Elephantiaſis*, commends, as *Craterus* did, the eating of Vipers, inſtead of Fiſh, in the ſame Diſeaſes. And to this Purpoſe I remember, that as *Lopez*, in his Relations of the Kingdom of *Congo*, in *Africa*, takes notice how greedily the Negroes eat Adders, roaſting them, and eſteeming them as the moſt delicious Food; ſo *Dampier*, alſo, informs us, that the Natives of *Tonquin*, in the *Eaſt-Indies*, treat their Friends with Arrack, in which Snakes and Scorpions have been infuſed, accounting this, not only a great Cordial, but, alſo, an Antidote againſt the Leproſy, and all other Sorts of Poiſon.

The Phyſicians in *Italy* and *France*, very commonly preſcribe the Broth and Jelly of Vipers Fleſh, for much the ſame Uſes, that is, to invigorate and purify the Maſs of Blood exhauſted with Diſeaſes, or tainted with ſome vicious and obſtinate Ferment.

From all this it appears, that the main Efficacy of the viperine Fleſh is, to quicken the Circulation of the Blood, promote its due Mixture, and by this means cleanſe and ſcour the Glands of thoſe ſtagnating Juices, which, turning to Acidity, are the Origin of many, at leaſt, of thoſe troubleſome Diſtempers in the Surface of the Body, which go under the Names of *ſcrophulous*, and *leprous.*

Theſe good Effects are owing to that penetrating, ſtrong Salt, with which the Subſtance of theſe Creatures does, in a very great Proportion, abound; and the Reaſon of this is from the Food they live on, which we have obſerved before to be Lizards, and Moles, whoſe Nature every one knows to be ſuch as muſt neceſſarily, when they are diſſolved in the Stomach, ſupply the Blood with a great Quantity of active and volatile Parts. And herein lies the Difference between the Fleſh of Vipers, and that of other innocent Serpents, which, feeding upon Graſs and Herbs, do not recommend themſelves to us by any of thoſe Properties, which are in ſo eminent a Degree found in the former.

Whoſoever reflects on what has been ſaid on this Head, will very readily acknowledge, that our Phyſicians deal too cautiouſly or ſparingly with a Remedy, which may be applied to very good Purpoſes, when they preſcribe a few Grains of the Powder of dried Vipers, or make up a ſmall Quantity of their Fleſh into Troches; whereas, if Service be really to be done this way, the Patient ought to eat frequently of Viper-jelly, or Broth; or rather, as the antient Manner was, to boil Vipers, and eat them like Fiſh; if this Food will not go down, (tho' really very good and delicious Fare) to make uſe at leaſt of Wine, in which Vipers have for a long time been infuſed, by which I know a very obſtinate *Lepra* has been removed; or, laſtly, in ſome Caſes, eſpecially where Wine is not convenient, to take good Quantities of their volatile Salt, in which alone the Virtue of the before-named Medicines principally reſide.

As for the Teeth, they are of two Sorts, the great, or poiſonous Fangs, and the ſmall.

The great, being fixed in the firſt Bone of the upper Jaw, are crooked and bent, like the *Dentes canini*, in moſt carnivorous Animals. They are manifeſtly hollow from their Root a conſiderable Way, not to the very Apex, or Point, (which is ſolid and ſharp, the better to pierce the Skin) but to a ſmall Diſtance from it, as is plainly ſeen by ſplitting the Tooth thro' the Middle. This Cavity ends at the convex Part in a viſible Slit, very well reſembling the Nip or Cut of a Pen, which is the Emiſſary or Outlet to the Poiſon.

Galen has given us a conſiderable Hint of this Make of the Tooth: For, the Mountebanks, (he ſays) uſed to ſuffer themſelves to be bit with Vipers, having, firſt, with ſome Paſtes, ſtopt the Holes of their Teeth, that the Venom being thus

kept

kept in, the Spectators might think they did by their Antidote, ſecure themſelves from its dangerous Effects.

The Reaſon why theſe Teeth are crooked is, that the Point of the Tooth, when the Viper bites, may be perpendicular to the Part to be wounded; for the Head being raiſed back, in the Time of Biting, and the Tooth erected, if this were ſtrait, it would not, by reaſon of its oblique Situation to the Part, enter with ſo much Force, nor ſo deep into the Fleſh.

As for the Number of the poiſonous Fangs, I have obſerved, that there are, for the moſt part, beſides one, two, or three on each Side, fixed perpendicularly to the firſt Bone of the upper Jaw, ſome others which are young, and of a ſmaller Size, adhering to the ſame Bone: Their Points are harden'd, and they have their Fiſſures formed as in the other; but their Roots are ſoft and mucilaginous, like the Roots of the Teeth in Infants; and ſo they lie always depreſſed at the Bottoms of the former.

They drop off from the Bone at the leaſt Touch; and therefore, ſome Anatomiſts have imagined them to be faſtened to Muſcles or Tendons, which would have rendered them altogether uſeleſs: For they are made to ſupply the Place of the greater, when they fall away, or are pulled out by Accident, and in order to do this, they do by degrees harden, and riſe more and more, till at laſt they ſtand upright, and come to a perpendicular Situation in the Bone.

They are not all of the ſame Growth; for in ſome we can only diſcern the Shape of a Tooth, without any Hardneſs, in others the Point, and in the next ſomewhat more is harden'd, and ſo on, to the greateſt Fang.

Their Number is very uncertain; there being ſometimes ſix or ſeven in each Side of the Jaw, ſometimes fewer.

Theſe ſeem to have occaſioned the Diſputes among the Antients, concerning the Number of the viperine Teeth.

The poiſonous Fangs have ſmall Holes at the internal Part of their Root, through which the Veſſels paſs, which carry their Nouriſhment.

It is remarkable, that Nature has provided young Vipers with poiſonous Teeth, grown to their Perfection, that ſo they may kill their Prey as ſoon as they come into the World.

The ſecond Kind of Teeth, or the ſmall, are hooked, and bent, as well as the former, but without any Slit or Opening: Of theſe there are four Rows, two on each Side of the Mouth: They are fixed in the third Bone of the upper Jaw, and in the ſecond in the lower.

Their Uſe is to hold the Prey faſt, while Execution is done by the Bite, leſt, in ſtruggling to get away, it ſhould pull out the Fangs.

The Inſtruments that emit the Venom being thus deſcribed; we come next to thoſe which ſerve to prepare and contain it.

This Liquor is ſeparated from the Blood by a Gland on each Side of the Head, placed in the anterior and lateral Part of the *Os Sincipitis*, juſt behind the Orbit of the Eye: It lies immediately under that Muſcle which helps to depreſs the Fangs, ſo that by the Action of this it is preſſed; which is an admirable Contrivance, to forward the Secretion of the Juice out of it.

It is a conglomerated Gland, compoſed of many ſmaller ones, contained in a common Membrane: Each of theſe ſends off an excretory Veſſel, all which do afterwards unite and form one Duct, which running towards the Roots of the Fangs, diſcharges the yellow Liquor into a Bag.

This Bag is fixed to the Baſis of the firſt Bone of the upper Jaw, and, alſo, to the Extremity of the ſecond, covering the Fangs near the Root. To the upper Part of this Veſicula there is joined another, in the anterior Part of which there is a Paſſage for the poiſonous Teeth.

This conſiſts of muſcular Fibres, both longitudinal and circular, by means of which it can contract itſelf when the Fangs are erected; and by this Contraction the Venom is preſſed into the Hole at the Root of the Tooth, and forced out at the Fiſſure near the Point.

That this is ſo done, I have frequently obſerved with the naked Eye, having cut off the Head of a Viper, and immediately pinching the Neck, to make it open the Mouth wide; for by this means the Venom was ſquirted out as from a Syringe.

When the Viper lies quiet, with its Mouth ſhut, the Fangs are depreſſed and covered with the external Bag; when it intends to bite, it opens the Mouth very wide, at the ſame time the lower Extremity of the ſecond of the common Bones is moved forwards by proper Muſcles, and turns, as it were, upon a fixt Centre, thus puſhing forward the upper and lower Jaws, whoſe Extremes are united. By this means the lower Part of the firſt Bone of the upper Jaw is thruſt forwards, the other Extremity turning in the Cavity of its Articulation, where it is faſtened by Ligaments. The Fangs being, by this Mechaniſm, erected, the Bags which covered them, by the

Contraction of their longitudinal Fibres, are pulled back; and the Action of the circular ones does, at the ſame time, ſtraiten the internal Bag, and force the Juice into the Teeth.

Beſides this, when the Viper bites, it ſtrikes in the Fangs to the very Root; and thus the *Veſiculæ* are ſtill more ſqueezed, for the Diſcharge of the Liquor.

It is worthy our Obſervation, that the Viper can move the Jaw-bones on one Side, without moving thoſe on the other; for they are not joined together at the Extremes, as in other Animals; which Contrivance is very beneficial to it in the ſwallowing its Prey; in that, while the Teeth on one Side ſtand unmoved, and fixed in the Fleſh to hold it, thoſe on the other Side are brought forward, to draw it in farther; then they keep it faſt till the former Jaws advance again in their Turn: Thus they act ſucceſſively, and force the Animal entire (there being no *Dentes Inciſivi*, or *Molares*, to divide it) into the *Oeſophagus*, whoſe muſcular Fibres are very weak, and can help but little in the Buſineſs.

The Symptoms which follow upon the Bite of a Viper, when it faſtens either one or both its greater Teeth, in any Part of the Body, are an acute Pain in the Place wounded, with a Swelling, at firſt red, but afterwards livid, which, by degrees, ſpreads farther to the neighbouring Parts with great Faintneſs, and a quick, though low, and ſometimes interrupted Pulſe, great Sickneſs at the Stomach, with bilious convulſive Vomitings, cold Sweats, and ſometimes Pains about the Navel; and if the Cure be not ſpeedy, Death itſelf, unleſs the Strength of Nature prove ſufficient to overcome theſe Diſorders; and though it does, the Swelling ſtill continues inflamed for ſome time; nay, in ſome Caſes more conſiderably upon the abating of the other Symptoms, than at the Beginning; and often, from the ſmall Wound, runs a ſanious Liquor, and little Puſtules are raiſed about it; the Colour of the whole Skin is changed yellow, as if the Patient had the Jaundice.

Theſe Miſchiefs, although different Climates, Seaſon of the Year more or leſs hot, the greater or leſſer Rage of the Viper, the Beaſt itſelf, of a larger or ſmaller Size, and, conſequently, able to communicate more or leſs Venom, and the like Circumſtances, may variouſly heighten or abate them, yet uſually diſcover themſelves much after the ſame manner in all; unleſs the Bite happen not to be accompanied with the Effuſion of that Liquor, which is the main Inſtrument and Cauſe of this violent and ſhocking Diſturbance.

But before I proceed to inquire into the Nature and Manner of acting of this Juice, it may be worth the while to take notice, that this is not made on Purpoſe to be deadly and deſtructive to Mankind; but that the true Deſign of it is (tho' Authors have not regarded it) to perform an Office and Service of ſo great Moment to the Preſervation of the Individual, that without it this Creature could not ſubſiſt.

For Vipers live principally upon Lizards, Frogs, Toads, Mice, Moles, and the like Animals, which they do not chew, but ſwallow down whole, and they lie in the Stomach; or if that be not big enough to receive them, partly in that, and partly in the *Oeſophagus*, which is membranous, and capable of great Diſtention, till by the ſalival Juices of thoſe Parts, together with the Help of the Fibres of the Stomach, and the Contraction of the Muſcles of the Abdomen, they are gradually diſſolved into a fluid Subſtance, fit for the Nouriſhment of their Bodies, which is the Work of many Days: This is one Reaſon why theſe Creatures can live ſo long without taking any freſh Food, which I have known them to do three or four Months; as another is, that their Blood is a groſſer and more viſcid Fluid than that of moſt other Animals; ſo that there is but a very little Expence of it, by Tranſpiration, and, conſequently, leſs need of Recruit; this not only Microſcopes diſcover, but Reaſon teaches; becauſe there is but very little muſcular Force in the Stomach to comminute the Food, and make a Chyle of fine Parts; and therefore the Blood muſt accordingly be of a tough and clammy Conſiſtence. Beſides, the Heart of a Viper has properly but one Ventricle, and the Circulation of the Blood is performed after the ſame manner as it is in a Frog and Tortoiſe, in which not above one Third of it paſſes through the Lungs; upon which Account its Comminution in them by the Air is proportionably leſſer than in other Animals. Now ſuch a manner of Feeding as this, does neceſſarily require, that the Prey ſhould, upon the firſt Catching, be immediately killed, otherwiſe it were by no means fit to be let into the Stomach; for we are not to think, that the Force of this Part would be alone ſufficient to deſtroy it, the Subtilty of a living Creature (beſides the Conſideration of the Weakneſs of the Fibres) being in a great meaſure able to elude that, as indeed we do every Day find live Animals in the Stomachs of others: And therefore to do this, is the proper Uſe both of the Teeth, and their Poiſon; for which being deſigned and adapted, it is no Wonder if the Viper, this ſame way by which it deſtroys its Prey, proves ſometimes miſchievous to any other Creature beſides,

beſides, when it happens to be enraged, or by any Provocation ſtirred up to bite.

This venomous Juice itſelf is of ſo inconſiderable a Quantity, that it is no more than one good Drop that does the Execution; and for this Reaſon Authors have contented themſelves with Trials of the Bite upon ſeveral Animals, never eſſaying to examine the Texture and Make of the Liquor itſelf; for which Purpoſe I have oftentimes, by holding a Viper advantageouſly, and enraging it till it ſtruck out its Teeth, made it to bite upon ſomewhat ſolid, ſo as to void its Poiſon, which carefully putting upon a Glaſs Plate, I have with a Microſcope, as nicely as I could, viewed its Parts and Compoſition.

Upon the firſt Sight I could diſcover nothing, but a Parcel of ſmall Salts nimbly floating in the Liquor; but in a very ſhort time the Appearance was changed, and theſe ſaline Particles were now ſhot out, as it were, into Cryſtals of an incredible Tenuity and Sharpneſs, with ſomething like Knots here-and-there, from which they ſeemed to proceed, ſo that the whole Texture did in a manner repreſent a Spider's Web, tho' infinitely finer, and more minute; and yet withal ſo rigid were theſe pellucid Spicula, or Darts, that they remained unaltered upon my Glaſs for ſeveral Months.

I have made ſeveral Trials with this Juice, in order to find out under what Tribe of Salts theſe Cryſtals are to be ranged; and not without ſome Difficulty, by reaſon of the minute Quantity of the Liquor, and the Hazard of Experiments of this Nature, have plainly ſeen that it does, as an Acid, turn the blue Tincture of Heliotropium to a red Colour.

I did not ſucceed ſo well in mixing it with Syrup of Violets, and yet it did really ſeem to induce in this a reddiſh Hue; but I am very certain it did not at all change it to a greeniſh Colour, as it would have done, if any ways alcalious.

This may ſuffice, in their own Way of arguing, to convince thoſe Gentlemen, who, without the Aſſiſtance of any Experiments, merely to ſerve an Hypotheſis, which they have too fondly taken up, have with great Aſſurance told the World, that the Viperine Venom is an Alcali, and conſequently to be cured by acid Remedies. But it is by far more eaſy to ſpin out a falſe Notion into precarious Reaſonings, than to make faithful Experiments, and fairly improve them by juſt and neceſſary Conſequences.

To proceed, this Diſcovery agrees very well with a Relation communicated by an ingenious Perſon to Dr. *Tyſon*; which does ſo much illuſtrate this Matter, that I ſhall tranſcribe it in his own Words, out of the *Philoſophical Tranſactions*: He ſays then, that being in the *Indies*, there came to him an *Indian*, with ſeveral Sorts of Serpents, offering to ſhew him ſome Experiments about the Force of their Poiſon: Having therefore, firſt pulled out a large one, the *Indian* told him this would do no Harm; and making a Ligature on his Arm, as in letting Blood, he expoſed it naked to the Serpent, being firſt irritated to make him bite it; the Blood that came out of the Wound, made by his Teeth, he gathered with his Finger, and laid it on his Thigh, till he had got near a Spoonful: After this he takes out another, called *Cobra de Capelo*, which was leſſer, and enlarges much upon the Greatneſs of his Poiſon. To ſhew an Inſtance of it, graſping it about the Neck, he expreſſes ſome of the Liquor in the Bags of the Gums, about the Quantity of half a Grain, and this he puts to the coagulated Blood on his Thigh, which immediately put it into a great Fermentation, and working like Barm, changed it into a yellowiſh Liquor.

This, I ſay, does well enough accord with what we have been advancing, concerning the Nature of this Juice: For *Boyle* hath long ſince proved by Experiments, that there is nothing of Acid in human Blood; and *Pitcairn* has demonſtrated, that the acid Subſtances of Vegetables, taken into the Stomach, are, by the Action of this Part, the Lungs and Heart, when they come into the Blood-veſſels, turned to alcalious; ſo that the arterial Fluid muſt neceſſarily be conſidered as an Alcali; and therefore, according to the known Principles of Chymiſtry, its Mixture with ſuch a Liquor as we have diſcovered the viperine Sanies to be, will always exhibit ſome ſuch Appearance as this now related.

But not to engage any farther in this Sort of Controverſies, we may, perhaps, from the foregoing Obſervations, receive ſome Light, in order to underſtand the Nature and Reaſon of all thoſe Symptoms which attend the Bite of this Creature: For the pungent Salts of this Venom, when with Force thrown into the Wound, will not only, as ſo many Stimuli, irritate and fret the ſenſible Membranes, whereupon there neceſſarily follows a greater Afflux than ordinary of the animal Juices that Way, (as is manifeſt from the *Bellinian* Doctrine *de Stimulis*) ſo that the wounded Part muſt be ſwelled, inflamed, and livid; but, alſo, theſe Spicula, being mixed with the Blood, will ſo diſjoin and diſunite the Parts of it, that its Mixture muſt be quite altered; and from the various Coheſion of its Globules

will ariſe ſuch different Degrees of Fluidity and Impulſe towards the Parts, from what this Liquor had before, that its very Nature will be changed.

It is worth the while, in the next Place, to conſider the Cure of this Miſchief, which, without all Doubt, ought to be by ſuch external Management of the Wound as may immediately deſtroy the infuſed Venom.

Boyle experienced an hot Iron, held as near the Place as the Patient could poſſibly endure it very effectual to this Purpoſe: But the ſame Method did not anſwer Expectation, in the famous Caſe related by *Charas*.

An extraordinary Virtue againſt this and other venomous Bites, is aſcribed to the Snake-ſtones brought from the *Eaſt-Indies*, one of which is to be preſently applied to the Part, and let ſtick till it drop off: Theſe are ſaid to be taken out of the Head of the Serpent, called by the *Portugueſe*, *Cobra de Capelo*, and to ſuck the Poiſon out of the Wound. *Redi* made Trials with ſeveral of them, but found no Service from any: Yet *Baglivi* tells us, of a terrible Bite of a Scorpion cured this Way. Monſieur *Charas*'s Pigeons all died, though theſe were immediately clapped on, and ſtuck cloſe to the Wound: But *Havers* ſaw a good Effect of one upon a Dog, who, though ſeverely bitten, ſuffered no Harm; nor any farther Mark of the Poiſon, than a livid Circle round the Place.

In plain Truth, as theſe celebrated Stones do not ſeem to be what it is pretended they are, but rather factitious Bodies, compounded, it may be, of calcined Bones, and ſome teſtaceous Matters mixt together; ſo, by reaſon of their ſpongy and porous Texture, they do very readily adhere to any moiſtened Part of the Fleſh, and imbibe whatſoever Humidity they meet with: This their Quality any one may experience, by holding one of them to the Roof of his Mouth: And it is upon this ſcore that, when put into Water, Bubbles are raiſed by the Air in their Interſtices, which ſome have too fondly thought to be the Effects of their throwing out the Venom they had ſucked in.

Their Make being thus, ſome Part at leaſt of the poiſonous Juice may eaſily be drawn out of the Wound, by ſuch an Application; and yet ſo much of it may ſometimes happen to remain in the Fleſh, as may make the Bite however to prove mortal. And thus it fared with a Pigeon, to the Thigh of which, firſt bitten by a Viper, I applied one of the Stones; for though it ſtuck faſt to the Wound, and thus ſaved the Life for about four Hours (whereas others uſually died in about half an Hour), yet, after this, the Mortification of the Part prevailed to that Degree as to become fatal to the tender Creature.

But our Viper-catchers have a Remedy far beyond all theſe, in which they place ſo great Confidence, as to be no more afraid of a Bite than of a common Puncture, immediately curing themſelves by the Application of their Specific.

This, though they keep as a great Secret, I have, however, upon ſtrict Inquiry, found out to be no other than the *Axungia Viperina* preſently rubbed into the Wound. And to convince myſelf of its good Effects, I enraged a Viper to bite a young Dog in the Noſe; both the Teeth were ſtruck deep in; he howled bitterly, and the Part began to ſwell. I diligently applied ſome of the *Axungia* I had ready at hand, and he was very well the next Day.

But becauſe ſome Gentlemen who ſaw this Experiment were apt to impute the Cure rather to the Dog's Spittle (he licking the Wound) than to the Virtue of the Fat, we made him to be bit again in the Tongue, forbearing the Uſe of our Remedy, and he died within four or five Hours.

At another Time I made the like Trial with the ſame Succeſs.

As this *Axungia* conſiſts of clammy and viſcid Parts, which are withal more penetrating and active than moſt other oily Subſtances, ſo theſe, without all Doubt, involve, and, as it were, ſheath the volatile Salts of the venomous Liquor, and thus prevent their ſhooting out into thoſe cryſtalline Spicula, which we have obſerved to be the main Inſtruments of that deadly Miſchief which attends the Bite.

By this means it comes to paſs, that this Cure, if rightly managed, is ſo eaſy and certain, as not to need the Help of any internal Medicines to forward it; but theſe however muſt take Place where, through want of the other, the Poiſon is ſpread farther, and has tainted the whole Maſs of Blood.

Nor yet is it neceſſary, even in this Caſe, to fatigue the Patient with a Farrago of Theriacas and Antidotes; for the volatile Salt of Vipers is alone ſufficient to do the Work, if given in juſt Quantities, and duly repeated; provided moderate Sweats be encouraged in Bed: Thus it ſucceeded with Monſieur *Charas*, and in ſome others I could relate; in one of which the Miſchief had gone ſo far as to induce an univerſal *Iterus*.

I muſt remark, that ſince Dr. *Mead* wrote the Treatiſe of Poiſons, from which theſe Particulars relative to the Viper are extracted,

extracted, a Man and his Wife, who made it their Buſineſs to catch Vipers, came from *Bath* to *Oxford*, and from thence to *London*; and, after having ſhewn a great Number of Experiments, with reſpect to the Bite of this Animal, at laſt diſcovered an effectual Remedy, which conſiſts in nothing more, than chafing the Part wounded with Olive-oil, before the Fire; and, if the Caſe ſhould be extremely bad, wrapping the entire affected Limb in a Cerate, made of White-lead, and the ſame Oil.

I muſt further obſerve, that as the viperine Poiſon acts by inducing a Coagulation of the Blood, which ſpreads gradually from the wounded Part to the Heart, of which I have ſeen an hundred inconteſtable Inſtances; and as rubbing in the Oil, prevents the Coagulation, and reſolves the Blood already coagulated; hence, perhaps, we may account for the Efficacy of Unctions, ſo much practiſed by the antient Phyſicians, eſpecially thoſe of the Methodic Sect.

And, farther, may we not preſume, that the Oil of Animals, ſo exquiſitely treaſured up in the Reſervoirs of the Cellular Membrane, may, upon ſome Occaſions, by mixing with the Blood, prevent Coagulations, and conſequently Diſtempers, from ſuch a Cauſe?

VIPERARIA. The ſame as SCORZONERA.

VIPERINA. The ſame as SCORZONERA.

VIRGA AUREA.

The Characters are;

The Root is fibrous; the Leaves are alternate and entire, and the Calyx is ſquamous. The Flowers are produced on the Tops of the Stalks and Branches, in a long Series like a Rod, are leſs than thoſe of the After, have ſhorter Pedicles, and are generally of a golden Colour.

Boerhaave mentions fourteen Sorts of *Virga aurea*; which are,

1. Virga aurea; folio ampliſſimo; dentato. *Au*, Virga aurea, Canadenſis, latiſſimo folio, glabro. *T.* 485.

2. Virga aurea; montana; latiore folio, glabro. *H. R. Par.* 186.

3. Virga aurea; annua. *Zanon.* 205. *T.* 484. *Conyza Canadenſis, annua, acris, alba, folio Linariæ.* Bocc. 86. *After Canadenſis, annuus, flore pappoſo.* H. R. Par.

4. Virga aurea; Canadenſis; hirſuta; panicula minus ſpecioſa. *H. R. Par.*

5. Virga aurea; Novæ Angliæ; altiſſima; paniculis nonnunquam reflexis. *Flor.* 2. 34.

6. Virga aurea; anguſtifolia; panicula ſpecioſa; Canadenſis. *H. R. Par. M. H.* 3. 125.

7. Virga aurea; Novæ Angliæ; foliis longiſſimis, glabris. *Flor.* 2. 35.

8. Virga aurea; foliis anguſtis; lævibus; non ſerratis; panicula ſpecioſa; floribus magnis.

9. Virga aurea; Noveboracenſis; glabra; caulibus rubentibus; foliis anguſtis, glabris. *Flor.* 1. 26.

10. Virga aurea; anguſtifolia; minus ſerrata. *C. B. P.* 268. *Boerh. Ind. A.* 97. *Virga aurea.* Offic. Ger. 348. Emac. 420. Raii Hiſt. 1. 278. Synop. 81. *Virga aurea vulgaris.* Park. 542. *Virga aurea vulgaris latifolia.* J. B. 2. 1062. *Tourn. Inſt.* 484. GOLDEN-ROD.

The common Golden-rod grows to be two or three Feet high, having round hairy Stalks, full of a fungous Pith; the lower Leaves grow on pretty long Foot-ſtalks; they are three or four Inches long, broadeſt in the Middle, and narrow at both Ends, indented about the Edges, and hairy on both Sides; thoſe, which grow on the Stalks, are leſs, and ſtand on ſhorter Foot-ſtalks, and ſometimes without any. The Flowers grow thick together, in ſmall Spikes, on the upper Parts of the Branches; they are compoſed of ſmall yellow Petals, ſet about a little tubular Thrum, which afterwards turn into Down. The Root is long, running aſlant with many Fibres; it grows in Woods and Hedges, and flowers in *July*.

The Leaves and Tops are uſed, this being accounted one of the beſt vulnerary Plants, and much uſed inwardly in Traumatic Apozems, and Wound-drinks; and, outwardly, in Cataplaſms, and Fomentations.

It is ſomewhat reſtringent, and uſeful againſt Spitting of Blood, and other Hæmorrhages; and is of great Service againſt the Stone. *Miller's Bot. Off.*

Golden-rod is ſlyptic, bitter, and gives no Tincture of Red to the blue Paper. It is likely, that its Salt reſembles that which is natural in the Earth; but it is mixed with a great deal of Oil, and terreſtrial Parts. Thus this Plant is vulnerary, and diuretic. It is preſcribed in Ptiſans, and Broths, for the Dyſentery, and for all Sorts of Hæmorrhages. Theſe Medicines are lenitive, alſo, and provoke Urine: The diſtilled Water of the Tops, and the Extract of the whole Plant, have the ſame Virtues. The Leaves and Flowers of the Golden-rod, are taken after the manner of Tea. It is uſed in the *Eau d'Arquebuſade*, and vulnerary Potions. *Martyn's Tournefort.*

It is a moſt celebrated Vulnerary, both for internal and external Uſe, and even to be preferred before the *Solidago Saracenica*. For internal Wounds, ſays *C. Hoffman*, it is effectual, by carrying off the Ichor with the Urine; which agrees with the Obſervation of the moſt celebrated Phyſicians, that almoſt all vulnerary Potions are diuretic; and it was cuſtomary for the Combatants at Wreſtling and Boxing, in their ordinary Drink, to take *Valerian*, which is a prime Diuretic. In external Wounds, this Plant is of Efficacy by Exſiccation and Abſterſion; for which Purpoſes it is highly qualified.

That it is none of the leaſt Lithontriptics and Diuretics, is agreed by all: It was firſt experienced by *Arnold. Villanovanus*, in the Stone, who uſed it in Powder; and it is celebrated for this Diſeaſe by *Barclay*, in his *Argenis*, and in his *Euphormio*. The Doſe is two Drams of the Powder every Morning in warm White-wine.

C. Hoffman ſays, it is endued with a remarkable abſterſive Virtue; whence it is ſo much celebrated in Obſtructions of the Viſcera, where there is a Tendency to a Dropſy; for which Intention, the Decoction of it was a long time kept as a Secret, tho' it be, alſo, commended againſt all Fluxes of the Belly and Uterus, and internal Hæmorrhages, which proves it to be rather aſtringent than abſterſory, unleſs, perhaps, it performs thoſe Effects by its deſiccative, or drying Quality, which all aſcribe to it. *Raii Hiſt. Plant.*

11. Virga aurea; Mexicana. *C. B. P. App.* 517.

12. Virga aurea; folio hirſuto ſalicis raro & leviſſime ſerrato; caulibus atropurpureis.

13. Virga aurea; major; foliis glutinoſis & graveolentibus. *T.* 484.

This *Boerhaave*, by Miſtake, has taken notice of already, under *Conyza*; *mas*; *Theophraſti*; *major Dioſcoridis*; for which I refer the Reader to CONYZA.

14. Virga aurea; omnium minima. *H. R. Par. Boerh. Ind. alt. Plant.*

The *Virga Aurea* is ſo acrimonious, that no Pepper can be compared with it, tho' it leaves not the leaſt Reliſh of Acridneſs in the Mouth, but proceeds through thewhole Body. It is like the *Ranunculus urens* of the Shops, and is of a moderately, or ſomewhat aſtringent Taſte, which at firſt is not unpleaſant, but leaves an ungrateful Reliſh in the Mouth. The Leaves are gathered in *May*, and dry'd for Uſe. *Barclay*, in his *Satyricon*, ſays, that he cured a Perſon of Quality, to whom he was ſent on an Embaſſy, of the Stone, and a Suppuration of the Kidneys, with the Powder of the dry'd Leaves. Three or four Ounces of the Plant macerated in Water, are a good vulnerary Doſe, and proper for internal Hæmorrhages, the Dyſentery, and Diarrhœa. Externally it depurates Wounds, abſterges Putridneſs of the Gums, faſtens looſe Teeth, and cleanſes malignant Ulcers, and Fiſtulas. I have often exhibited it with great Succeſs in all Sorts of putrid, viſcid, and cold Indiſpoſitions. The Leaves duly dry'd, and infuſed after the manner of Tea, and drank with an Addition of Honey, are highly corroborative and deterſive, and of extraordinary Efficacy in Ulcers of the Lungs, and Wounds of the Breaſts, and other Parts.

The *Virga aurea*, as we are told by *Tournefort*, is a Plant of *Canada*, but is now common throughout *Europe*, becauſe the Seeds brought from that Country have diffuſed themſelves through all the *European* Regions, and grow without Difficulty; for the Seeds are agitated and diſperſed into all Parts by the Winds, and where-ever they fall, eaſily take Root, and ſpring up. *Hiſt. Plant. adſcript. Boerhaav.*

VIRGA AUREA is, alſo, a Name for ſeveral Sorts of DORIA; which ſee.

VIRGA AUREA, *Linariæ foliis.* A Name for the *Coma aurea, Germanica.*

VIRGA PASTORIS. A Name for the *Dipſacus; ſylveſtris; capitulo minore; vel Virga Paſtoris, minor.*

VIRGA SANGUINEA. A Name in *Boerhaave* for the *Cornus; ſarmina.*

VIRGATA SUTURA is the *Sutura Sagittalis*, Sagittal Suture of the *Cranium.*

VIRGINALE CLAUSTRUM. The HYMEN.

VIRGO. Beſides the various Kinds of acute and chronical Diſeaſes, there are, alſo, ſome Diſorders incident to Virgins, pregnant, and Child-bed Women, as, alſo, to Children.

When the Body of a Woman has arrived at its full Growth, if her Conſtitution is good, more Blood is generally prepared than can be contained in the Veſſels; for which Reaſon it is eliminated from the Uterine Arteries, under the Name of the *Menſes.*

If, in ſuch a State and Condition of Body, this Blood is retained, a Plethora, Slowneſs, a Senſe of Weight, Paleneſs, a Pain of the Loins, and Groin, and a Depravation of almoſt all the Functions, whether natural, vital, or animal, are produced, and may be eaſily accounted for from the too great

Preſſure upon the Veſſels, by the redundant, ſtagnant, and ſuffocated Blood.

The Blood, when thus accumulated, often finds ſurpriſing Ways, not known in the natural Diſcharge of the Menſes, ſince Phyſicians have ſometimes ſeen it eliminated by the Eyes, the Ears, the Gums, the Salival Ducts, and the Oeſophagus, by Stool and Urine, by the Breaſts and Skin, as, alſo, by Wounds and Ulcers.

By this means all the Viſcera are often weakened, and a ſurpriſing Number of Diſorders produced, partly by the conceived Putrefaction, and partly by the Injury done to the Veſſels.

This Diſorder is known, firſt, by the Age of the Patient; ſecondly, from her full Growth; thirdly, from a Plethora; and, fourthly, from the Signs of the Diſeaſe, ſubſequent to this Plethora.

It is cured by various Remedies adapted to the different Cauſes from which it proceeds.

Thus it may proceed either from a natural or accidental Concretion of the Pudenda, in which Caſe the Surgeon is, with a proper Inſtrument, to make a due Inciſion.

But, when it proceeds from a Stagnation of the Humours, theſe are to be rendered fluid; firſt, by Fomentations, and Frictions of the Feet; ſecondly, by Veneſection in the Feet; thirdly, by the Exhibition of uterine Purgatives, ſuch as Aloes, Myrrh, Betony, Coloquintida, Gum Ammoniac, Bdellium, Sagapenum, Opopanax, Galbanum, Aſa-fœtida, and the Elixir Proprietatis; fourthly, by Emmenagogues, which beſides theſe already enumerated, are Birthwort, Mug-wort, Motherwort, Chamomile, Juniper, Marjoram, Marum, Feverfew, Penyroyal, Rue, Savin, Sage, Elder, Mother of Thyme, Tanſey, the Tree of Life, and Thyme; fifthly, by Plaiſters, Fomentations, Liniments, Vapours, and Heat. The Plaiſters proper for this Purpoſe are, thoſe of Cumin, Melilot, Galbanum, Bay-berries, Labdanum, and Oxycroceum, applied to the Soles of the Feet, the Navel and Groin. The Fomentations may conſiſt of *Venice* Soap, and a Decoction of the above-mentioned Herbs. The Liniments are to be prepared of Soldiers Ointment, nervine Ointment, that of Elecampane without Mercury, that of Agrippa, and that of Sowbread; diſtil'd, aromatic Oils, and eſpecially the diſtil'd Oils of Juniper-berries, Hyſſop, Mace, Marjoram, Origanum of *Crete*, Roſemary, Savin, Spike, Tanſey, and Amber; the Oils by Infuſion of Wormwood, Dill, Chamomile, Catmint, Rue, Caſtor, Saffron, Orris, and Earth-worms. Thus,

Take of Soldiers Ointment, and nervine Ointment, each one Ounce; of the diſtilled Oil of Juniper-berries, one Dram; of the diſtilled Oil of Savin, and of the Oils of Rue and Caſtor by Infuſion, each half an Ounce: Make into a Liniment, to be applied to the Navel, Pubes, and Groin.

As for the Vapours, thoſe ariſing from a Decoction of the Herbs already mentioned, and received into the Uterus, are moſt proper. And, ſixthly, by corroborating the Veſſels weakened by the Plethora, by means of Chalybeates and Aſtringents: Thus,

Take of the Filings of new and unruſty Iron, two Ounces; of *Peruvian* Bark, and Winter's Cinnamon, each two Ounces; of dried Rhubarb, half an Ounce; and of generous *Rhenish* Wine, two Pints: Make into a medicated Wine, of which two Ounces may be taken thrice a Day upon an empty Stomach.

When the Cauſe of the Diſorder is by theſe means removed, the Symptoms already mentioned either ſpontaneouſly ceaſe, or are to be cured in the ſame manner with the Diſorder they moſt nearly reſemble, which may be eaſily done from what has been ſaid. *Boerh. Aph. & Mat. Med.*

VIRIÆ, or VIRIOLÆ. Rings worn upon the Arms as Amulets.

VIRIDE ÆRIS. Verdegriſe.

VIRIDELLUS. Vitriol; or the Epilepſy.

VISCAGO. A Name for the *Lychnis*; *facie Auriculæ Urſi.*

VISCAGO. Mucilage.

VISCALEUS. The ſame as Viſcum. *Johnſon.*

VISCARIA. A Name for the *Muſcipula*, Catch-fly.

VISCERA. The Bowels.

VISCERALIA.

Viſceral Remedies in general are, thoſe which impart Strength and Firmneſs to the ſanguineous Viſcera, ſuch as the Liver, Spleen, Uterus, Kidneys, and Lungs; by which means they are qualified for a more happy and expeditious Performance of their reſpective Functions. To this Claſs we may, therefore, commodiouſly refer hepatic, ſplenetic, pneumonic, uterine, anti-cachectic, anti-hydropic, anti-icteric, anti-hyſteric, and anti-phthiſical Medicines: But the moſt conſiderable Viſcerals are, the Roots of red Gentian, long and round Birthwort, Succory, Zedoary, Fern, true Rhubarb, and Rhapontic, Turmeric, and Reſt-harrow, *Peruvian* Bark, Winter's Bark, the Barks of Tamariſks, the Aſh, and Capers, together with Cloves; the Herbs Wormwood, the Leſſer Centory, Fumitory, Carduus Benedictus, Marſh-trefoil, Golden-trefoil, Baum, ſpotted Lungwort, Spleenwort, Agrimony, Horehound, Dodder, *Paul's* Betony, Scabious, Spurge, Maiden-hair, and Mouſe-ear. The Viſcera are, alſo, excellently ſtrengthened by ſome of the reſinous Gums, ſuch as Myrrh, Aloes, Bdellium, the Gum of the Ivy-tree, Gum Ammoniac, Olibanum, Sagapenum, Opopanax, and Aſa-fœdida. Some Minerals are, alſo, excellent Viſcerals, ſuch as the Flowers of pure common Sulphur, Filings of Steel, and all Preparations of that Metal. Some chymical Preparations are, alſo, powerful Viſcerals, ſuch as the Salts of Herbs obtained by Incineration, the Arcanum Tartari, the Terra foliata Tartari, Cream of Tartar, Sal Polychreſtum, antimoniated Nitre, Spirit of Sal Ammoniac, Tincture of *Mars* extracted with Spirit of Wine from the Flowers of Sal Ammoniac prepared with Blood-ſtone, the Tincture of Tartar, the Tinctura Antimonii Alcaliſata, the Elixir Proprietatis prepared with a Lixivium, the Eſſence of Soot, the Viſceral Elixir prepared with an aqueous ſaline Menſtruum, the Antimonium Martiale Cachecticum, *Beecher's* Maſs of Pills, and others of a like Nature. To the Claſs of Viſceral Medicines, alſo, belong Mineral Waters, eſpecially ſuch as contain a certain ſubtile chalybeate Principle, ſuch as thoſe of *Pyrmont*, *Spaw*, and *Swalbacen*; and much more thoſe which contain a larger Quantity of a chalybeate Principle, ſuch as thoſe of *Lauchſtad*, *Radeberg*, *Bebra*, and *Frayenwald*.

Theſe balſamic Viſcerals, partly by a ſulphureous, balſamic, and ſomewhat fixed earthy Principle, and partly by their alcaline, ſulphureous, ſaponaceous, and bitter Quality, perform their Operation upon the Viſcera, whoſe Veſſels are obſtructed and infarcted by groſs and viſcid Humours, by inciding and diſſolving the tenacious Juices, and, at the ſame time, procuring a due contractile and elaſtic Force to the Veſſels and Fibres of the Viſcera, which had loſt their Strength and Tone. Hence they are of great Efficacy, both for the Prevention and Cure of thoſe chronical Diſeaſes, which ariſe from any Diſorder of the Viſcera.

Though all Viſcerals agree in this, that they ſtrengthen the Tone of the Viſcera, and remove Infarctions and Obſtructions, yet it is neceſſary to vary them, according to the Diverſity of Viſcera affected, and the Diſeaſes thereby produced. Thus, for Inſtance, if the Liver is obſtructed, and a Jaundice, Cachexy, or Scurvy, produced by that means, the moſt efficacious Viſcerals are thoſe poſſeſſed of a certain ſaponaceous and deterſive Bitterneſs, ſuch as the Five aperient Roots, Rhubarb, Turmeric, Opopanax, Bdellium, *Venice* Soap, Elixir Proprietatis without an Acid, Eſſence of Rhubarb prepared with Salt of Tartar, Eſſence of Trefoil, and all good Preparations of Steel. When there are too great a Relaxation and Infarction of the Lungs, and the Diſeaſes by that means produced are preſent, Myrrh, Gum Ammoniac, Flowers of Sulphur, *Paul's* Betony, Scabious, Chervil, Lungwort, Mouſe-ear, Horehound, and Maiden-hair, are generally thought moſt efficacious. When the Spleen being preternaturally large, and infarcted with Blood, favours the Generation of an impure Blood, and eſpecially of a Cachexy, the Barks of Tamariſks and Capers, Fumitory, Spleen-wort, Dodder, Spurge, the Roots of Reſt-harrow, and Chalybeates, are preferable to other Remedies. When from a weak, and too much relaxed Tone of the Kidneys, nephritic Pains and Stones are formed, the Bark of the *Egyptian* Thorn-root, and an Infuſion of it; as, alſo, the Robs of Hounds-tongue and Juniper, are, in a peculiar manner, efficacious. From a weak State of the Uterus, and its Veſſels, and a ſlow Circulation of the Blood and Humours, ariſe numberleſs chronical Diſeaſes, which are efficaciouſly cured by long and round Birthwort, Mugwort, Myrrh, Feverfew, Galbanum, Bdellium, Opopanax, Amber, *Beecher's* Maſs of Pills, and others, prepared in the ſame manner. If the Inteſtines, and their Glands, the ſecretory, excretory, biliary, pancreatic, and lacteal Ducts, are ſo deprived of Strength, that by a copious Defluxion of Humours, exceſſive Fluxes are produced; or, if the Humours ſtagnating in the Veſſels lay a Foundation for febrile Motions and Paroxyſms, Rhubarb, *Peruvian* Bark, Winter's Bark, Caſcarilla Bark, and the moſt ſubtile Crocus, and Eſſences of *Mars*, are found more efficacious than any other Remedies.

But, with reſpect to Corroboratives in general, it is to be obſerved, that they produce far better Effects, if not only before their Exhibition the redundant Blood is leſſened, and the Sordes of the *Primæ Viæ* evacuated by proper Laxatives; but, alſo, if, in order to render the Humours more fluid, they are exhibited in Decoctions or Infuſions, or which is ſtill better, with Medi-

dicinal Waters, or Whey; by which means, the Operation of these Corroboratives, which are of an astringent Nature, is greatly assisted in removing violent chronical and inveterate Disorders; especially when their Use is for a considerable time persisted in, and proper Exercise, whether by Riding or Walking, used. *Fred. Hoffman.*

VISCIDITAS. See LENTOR.

VISCUM, VISCUS, ἰξός.

The Characters are;

The Leaves are conjugated, narrow, and oblong; the Flower is monopetalous, shaped like a Bason, quadrifid, sprinkled with Warts, and male; the Ovary grows in a different Place from the Flower, and is of a tender Substance, surrounded with four small Leaves; and becomes a roundish Berry, full of a Glue, and containing a flat Heart-shaped Seed.

Boerhaave mentions but one Sort of *Viscum*; which is,

1. Viscum; baccis albis. *C. B. P.* 423. *Boerh. Ind. A.* 228. *Viscum.* Offic. Ger. 1168. Emac. 135. Raii Hist. 2. 1583. Synop. 3. 464. *Viscum vulgare*, Park. Theat. 1392. *Viscus vel Viscum arborum.* Merc. Bot. 1. 77. *Viscus Quercus, & aliarum arborum.* J. B. 1. 89. MISSEL AND MISSELTO.

This Plant is never found upon the Earth; it grows upon the Oak, Apple, Plum, Pear, Acacia of *America*, and several other Trees. That which is found in the Wood of *Vincennes*, occupies the best Branches of the White-thorn, on whose Branches neither Earth, nor any other Matter, is to be found, which may seem proper to make the Seeds of this Plant chit. There is first discovered only a Tumor in those Parts to which the Misselto has fastened itself; its Flowers grow by threes, at the Division and Extremities of the Branches; each Flower is a yellowish Bason, of about three Lines Diameter, of the Thickness of *Spanish* Leather, cut into four Segments, rounded in three Points, and opposite to each other, in Form of a Cross, in such manner, that those which are opposite, are equal between themselves, but unequal with respect to the others; each Segment is raised with a little Bump, paler than the rest, and divided into Apartments full of little oval Holes, filled with Dust resembling Flour of Sulphur, or that which flows from the Summit, of other Plants.

The Flowers of Misselto produce nothing; the Fruits grow upon different Branches from those which bear the Flowers; these Branches are found, sometimes, upon the small Plant that bears the Flowers; and sometimes, also, upon Plants which bear only Fruit.

These Fruits are disposed, also, by Threes, at the Extremities of the Branches; each Fruit begins by a little oval Embryon, encompassed with four thick yellowish Leaves, half a Line long, pointed, and easily falling off; this Embryon thickens insensibly, and forms an oval Berry, three Lines long, like a little Pearl, filled with a flat Seed shaped like a Heart, covered with a silver-coloured Membrane, very fine, and full of Glue, that is to say, a very viscid, whitish, and sweetish Substance, in which the Seed naturally germinates, and pushes forth two Radicles out of the Side of its Notch.

This Seed, in all Appearance, produces the young Plants of Misselto to be seen upon the Branches of the Trees now mentioned; for some do but just peep, (if I may so say) and have only the Radicles which began to appear in the Berries. Nevertheless, we cannot say, that this Seed passes thro' the Root of the Oak, and the other Trees, and ascends into the Branches by the Sap-vessels; for each Seed is two Lines diameter, and the Texture of these Vessels cannot be perceived by our naked Eyes. It follows, then, that this Seed must be applied, by some external Cause, to the Branches of the Trees: These Causes may be reduced to two principal ones.

The Birds, perhaps, by crushing these Berries with their Feet or Bills, may give them an Opportunity of fastening themselves to the Branches, by their Glue: As we see the Magpies and Jackdaws contribute to the multiplying of several Plants, by carrying about their Kernels, and burying them. It may happen, also, that the Birds which have swallowed the Missel-to-berries may void them upon the Branches of the Trees on which they perch; which made *Plautus* say, *Ipsa sibi avis mortem cacat*; tho' it is not very easy to comprehend how the Seeds which pass thro' the Gizzards of the Birds should escape being bruised, and ground to Pieces.

It may happen, also, that these Berries, falling, either of their own Accord, or by the Violence of the Winds, may stick, sometimes, against the Branches of the neighbouring Trees, especially if they happen to be applied by that Part by which they hung upon the Misselto; for this torn Part easily fastens itself to any Body on which it falls: But in what manner soever these Berries stick, we have Reason to believe, that the Glue, which they are filled with, insensibly softens the Bark to which it is fixed; and then the Seed, which had germinated before in its Berry, as we observed above, pierces it easily, by its Radicle. Perhaps this Glue, tho' it appears so mild and insipid to us, ferments with the Sap of the Trees, and tears the Fibres of their Bark, which favours the Passage of the Fibres of the Radicle considerably. Thus the *Ova fœminea*, falling into the Body of the *Uterus*, fasten themselves to it, by means of the *Placenta*; the Juice of which, fermenting with that of the Glands of the Bottom of the *Uterus*, makes a little Inflammation, by means of which these two Parts stick together.

The Radicle, then, of the Seed of the Misselto, finding it easy to pierce the Bark of the Branches, lengthens into greenish Fibres, which run, at first, thro' the parenchymous, and piercing, afterwards, the ligneous Part, interlace themselves with the Fibres of the Branches, and insinuate themselves into their Vesicles, out of which they draw a Juice proper for their Nourishment. One may easily distinguish these Fibres, if one take the Pains to trace them, after having discovered the first Bark. It is no wonder, that the Place where they insinuate themselves should swell, since they increase the Bulk of it; and, besides, these Roots, by taking hold, press the Vessels of the Branches in some Places, strangle them, and make them burst into others, which causes the Interception and Extravasation.

Misseltoe can live only upon Trees, because, perhaps, its Radicle, not having a Structure proper to separate from the Earth, and prepare the Nourishment necessary to the Vegetation of this Plant, it is necessary that this Preparation should be made in the Root of another Plant, which is to it as a Nurse; in the same manner as, the Stomachs of Children being too weak to prepare their Nourishment, they must either have a Nurse, or it must be accommodated to the Weakness of their Stomachs. To satisfy myself concerning the Production of Misseltoe, I have sown the Seeds of it for three Years together; but I have never seen any of them come up: I have fastened, also, several Berries, in *March* and *April*, upon young Branches of the Apple-tree and White-thorn; but the Violence of the Winds, and the frequent Rains which usually fall in that Season, have not permitted me to satisfy myself entirely concerning this Matter: So that I only propose Conjectures, which have Probability enough to be received in Natural Philosophy.

The Wild Pear-trees are covered over with Misseltoe, and I observed upon their Trunks, tho' the Bark was hard, the first Shootings of the Seed, which I had long sought, but could never find, in *France*, where this Plant is so common. These Seeds, which are of the Shape of a Heart, were out of their Cases, and stuck, by their Clamminess, to the Trunks and Branches of these Trees, when the Wind, or any other Cause, shook them out: Each Seed was laid in such manner, that the Point of the Root began to pierce into the Bark, whilst the Eye of the Seed shot out, and unfolded itself. All this confirmed me in my Opinion which I had mentioned concerning the Multiplication of Misseltoe, in my History of Plants which grow about *Paris*. *Tourn. Voyage into the Levant.*

The Fruits of the Misseltoe begin by Embryons crowned with four little Leaves, or charged with a radiated Crown, composed of four little yellowish Leaves, articulated about the Head of each Embryon; these Embryons proceed out of a yellowish round Mass, articulated with the Extremity of the Branch, and two opposite Leaves, which terminate it on the Sides. This Observation shews, that M. *Tournefort* was mistaken in the Description which he has given us of these Embryons. The Berries of Misseltoe, each of them, often inclose two Seeds; the Flowers of the male Plants are monopetalous, cut into four equal Parts, each charged, on its inner Surface, with a Summit, which is strongly fastened to it: It flowers at the same time with the female. *Vaill.*

Misseltoe is accounted a cephalic and nervine Medicine, particularly useful for all Kinds of Convulsion-fits, for the Apoplexy, Palsy, and Vertigo; for which Purposes, some prefer the Misseltoe of the Hasel to that of the Oak. They who have a mind to know all the Virtues of this Plant, may consult Sir *John Colbatch*'s Discourse of the Misseltoe.

Of the Berry of this Plant was formerly made the *Viscus Aucupum*, or Birdlime, by boiling the Berries in Water till they burst, when they are well beaten in a Mortar, and afterwards washed in Water, till all the branny Husk was cleared away; but with us, in *England*, Birdlime is made of the Holly-tree, which they strip off about *Midsummer*, boiling a good Quantity of it in Water for about twelve Hours, till the whitish outward Bark is separated from the green; this they lay in a cool Vault, or Cellar, covering it with Fern, or such-like Matter, letting it lie for a Fortnight, by which time the Bark will be turned into a Jelly, which they afterwards beat in a Stone Mortar, till it becomes a tough Paste; this they wash well in running Water, till all the Sordes are cleared away, and then put it into earthen Vessels.

Birdlime is a powerful Attractive, and good to ripen hard Tumors and Swellings: It is an Ingredient in the *Emplastrum Diachylon magnum. Miller's Bot. Off.*

The

The Birdlime, or Glue, uſed for Fowling, was much uſed, by the Antients, in Medicine. It has the Virtue of mollifying and diſcuſſing Tumors, the Parotides, and Abſceſſes, being mixed with Roſin, and an equal Quantity of Wax; it, alſo, cures the *Epinyctides*, and, as *Pliny* ſays, dries up ſtrumous Ulcers, and cures the Epilepſy. It is good for many other Things, which may be found in *Dioſcorides*, *Pliny*, and *Galen*.

The Wood is of principal and ſpecific Uſe in the Epilepſy; it is, alſo, preſcribed for the Apoplexy and Vertigo, taken inwardly, or hung about the Neck: For theſe Diſorders it is acknowledged to be effectual, by the unanimous Conſent of antient and modern Phyſicians. We know ſome, ſays *J. Bauhine*, who have made uſe of the Wood of *Viſcum*, macerated in Wine, with Succeſs, againſt the Vertigo. The Powder of *Viſcum*, eſpecially what grows upon Oaks, not only cures the Epilepſy, but provokes the Menſes: It is, alſo, an *Arcanum* againſt a Pleuriſy, being taken once and again, and a third time, in Water of Carduus and Poppy. D. *Bowles*.

J. Bauhine writes, that he has ſeveral times adviſed the Uſe of *Viſcum*, bruiſed and macerated in proper Waters, againſt Worms of the Inteſtines in Children.

The Powder of the *Viſcum* which grows on the *Oxyacanthus*, being infuſed in White or *Spaniſh* Wine, and given two Hours before the Paroxyſm, or Fit, and the Doſe repeated, if neceſſary, has often removed, and perfectly cured a Quartan.

The Leaves, after they have been chewed, and ground by the Teeth of labouring Beaſts, and Cows, are, by our ruſtic People, eſteemed effectual for expelling the Secundines.

Viſcum is a paraſitic Plant, or Shrub, which grows on other Plants or Shrubs.

It is much controverted whether the Seed of this Plant, which is perfect and mature, ever produces a Plant of the ſame Kind. *Ariſtotle*, *Pliny*, and all the Antients, with one Conſent, hold the Affirmative, and that *Viſcum* is propagated from the Seed of the Berries paſſing thro' the Bodies of Thruſhes, Wood-pigeons, and other Birds of that Kind, after the pulpous Subſtance, involving the Grains, is concocted. Such is the Nature of the Seed, ſays *Pliny*, that, unleſs it be maturated in the Bellies of Birds, it will not ſhoot. But *Julius Scaliger*, and, after him, *J. Bauhine*, and moſt of the Moderns, aſſert the contrary, and endeavour to prove the ſame, by a Multitude of Arguments; ſome of which, however, are eaſily anſwered. It is more difficult to anſwer the Argument drawn from the Situation of the *Viſcum* on the Branches: For how is it poſſible for the Seed of the *Viſcum* to ſettle on ſlender, erect Sprays, on which the Birds themſelves can hardly reſt, and thoſe, too, agitated by the Winds, and waſhed with frequent Showers? Or, what is more, how can the Seed lodge itſelf on the prone Part of the Branches, or that Side of them which faces the Ground? To this Objection, however, it may, with ſome Shew of Probability, be anſwer'd, that the Excrements of the Birds, fed with *Viſcum*, participate of its Nature; and therefore the Seed, beſmeared with that viſcid Matter, may be ſo firmly agglutinated to the Branches, as not eaſily to be ſeparated from them by the Force of Wind or Weather. We, indeed, for our Part, are not free to admit of ſpontaneous or equivocal Generation; and ſince all Seed, as *Theophraſtus* truly ſays, is for the Sake of Generation, it ſeems to us abſurd, and by no means probable, that Nature ſhould have created any perfect Seed, and that too in great abundance, which yet, in all its Species, is wholly uſeleſs, and unfit for the Propagation of its Kind. *Raii Hiſt. Plant.*

Pliny tells us, *Lib.* 16. *Cap.* 30. that, among other Products of the *Ilvas*, it bears *Viſcum* on that Part of it which looks towards the North, and *Hyphear* on its South Side. And *Lib.* 17. *Cap.* 4. he further ſays, that there are three Kinds of *Ilvas*; for what grows on Firs, and Larch-trees, in *Eubœa*, is called *Sida*; in *Arcadia*, *Hyphear*; and that the *Viſcum* [properly ſo called] grows on the *Quercus*, *Robur*, *Ilex*, eſpecially the *Ilex Sylveſtris*, and the *Terebinthus*, and on ſeveral other Trees, but moſt plentifully on the *Quercus*, whence it is called *Dryos Hyphear*, "the *Hyphear* of the Oak:" And a little after he ſays, that the *Hyphear* is fitteſt to feed Cattle.

Theophraſtus, whom *Pliny* tranſcribes with ſome Variations, and, perhaps, Miſtakes, in the Beginning of *Cap.* 23. *Lib.* 2. *Caſ. Plant.* tells us, that it is very ſurpriſing, and looks quite odd, and unaccountable, that ſome Seeds and Plants will not ſhoot or grow in the Earth. Of this Nature are the *Viſcum* [*Ixia*], *Stelis*, and *Hyphear*. *Stelis* is a Word they uſe in *Cilicia*, but *Hyphear* is an *Arcadian* Term, and *Ixia* [*Viſcum*] is a Name they uſe in common. Some will have theſe three to be of the ſame Nature; but there ſeems to be ſome Difference between them, in that they grow on different Plants; for the *Hyphear* and *Stelis* grow on Firs and Pines, but the *Ixia* on the *Quercus* and *Terebinthus*, and many other Sorts of Trees. Others allege, as a good Argument for their being diſtinct, if the Obſervation be right, that not only each of theſe is produced on homogeneous Trees, as, for Inſtance, the Pine and Fir, but more than one are to be found growing on different Parts of the ſame Tree, where on one Side you may obſerve the *Stelis* or *Ixia*, and on the other the *Hyphear*.

Here *Theophraſtus*, and his Tranſcriber *Pliny*, ſeem to make the *Hyphear* and *Stelis* diſtinct Species from the *Viſcum*, but, ſays *Ray*, erroneouſly; for if they were really different, how comes it to paſs that, in ſo many Ages, and among ſuch a Multitude of Authors ſince the Time of *Theophraſtus*, this Diſtinction could never be diſcovered, but has hitherto eſcaped the diligent Search, and curious Eyes, of the moſt ſagacious Botaniſts? Nor do we approve thoſe Diſtinctions of *Viſcum* which, are taken from the different Kinds of Trees on which it grows; as if what grew on Trees of different Species were itſelf, alſo, ſpecifically different. And what *Theophraſtus* has written, that it always preſerves its Leaves on Evergreens, but loſes them on Plants which ſhed their Leaves, is contrary to Matter of Fact; for what grows on Pear-trees, Apple-trees, Almond-trees, and many others, whoſe Leaves are caducous, is perpetually green, and never loſes its Leaves. As to what *Matthiolus* ſays of the *Viſcum* growing on the *Quercus*, *Robur*, and *Caſtanea*, that all its Leaves fall off at the Approach of Winter, let him anſwer for himſelf: For my Part, I could never make the like Obſervation on any Tree, at any time of the Year. *Raii Hiſt. Plant.*

VISIO. Viſion.

Light, which is an Aggregate of all Colours collected together, ſends forth Rays on all Sides: Theſe Rays, tho' very ſubtile, are, in like manner, compounded of all Kinds of Colours; whence they are again divisible into ſimple Rays, which, collected ſeparately, or of one Sort, or of different Sorts together, repreſent Variety of Colours; but, all united, form a very ſplendid lucid Beam, or very white Brightneſs. Theſe Rays proceed from a lucid Point, as from a Centre, towards all Points without it, in ſtrait Lines, thro' an homogeneous Medium, in no eſtimable Space of Time, paſſing thro' pellucid, and falling upon opake Objects. Hence, all Points of the Cornea are ſtruck by Rays contained within a Cone whoſe Vertex is the lucid Point, and its Baſe the Plane of the Cornea, if there be no Impediment interpoſed between the radiating Point and the Cornea.

The ſame Rays, approaching denſer Bodies, are there incurvated, ſome more, ſome leſs: Hence they are ſeparated, and being ſeparated, and reflected, exhibit Variety of Colours, falſly aſcribed to the reflecting or refracting Body, unleſs ſo far as they are ſeparated by its means: The Reflexion, then, is here various, according to the Variety of the Colour latent in the Ray; the Angle, however, which the reflected Ray makes with a Perpendicular erected at the Place of Incidence, ſeems to be the ſame as that made by the falling Ray with the ſame Perpendicular; and in other Reſpects there ſeems to be no Alteration at all.

If theſe Rays paſs out of one Medium into another, in their Approach to the latter they are incurvated, and, in that Condition, paſs on thro' that Medium; and the more denſe this is, the nearer incurvated are they towards a Perpendicular, and ſo on the contrary: And the ſame is, alſo, owing to a ſingular Cauſe latent in ſome Fluids, not to be determined but by Experiments. This Inclination is called *Refraction*.

This Refraction, with regard to Senſe, is regulated by one certain Law, which is as follows: If the ſame Ray falls into the ſame pellucid Medium in Variety of Angles, the Sines of the Angles of Incidence will bear the ſame Proportion to one another, as the Sines of the refracted Angles.

Hence it follows, that Rays proceeding from a radiating or reflecting Point to the pellucid Cornea, are there refracted towards a Perpendicular, with almoſt the ſame Alteration of Courſe as in Water; ſo they paſs on thro' the aqueous Humour, and have their Courſe determined through the Perforation of the Pupil to the Superficies of the cryſtalline Lens; but thoſe Rays which enter with ſo great Obliquity as to fall on the Iris, are thence reflected, and fall out of the Eye again, that they might not, by their Reflexion and Ingreſs into the Eye, diſturb the Diſtinctneſs of Viſion; and thoſe other Rays, which, on account of their Obliquity, fall between the lower Part of the Uvea and the vitreous Body, or on the Superficies of the vitreous Body, are immediately ſuffocated in the black Pigment of the ſame, and loſt, as if they had never been, that ſo no Rays might be tranſmitted thro' the Vitreous Humour, but ſuch as, after penetrating the Pupil, fall upon the cryſtalline Lens; the Iris, in the mean time, being contracted, or dilated, admits more or fewer Rays, in proportion as the Object is nearer, and more vivid, or more remote and languid; under this Law, or Regulation, that the nearer, or more luminous, the Object, the narrower, or more contracted, the Pupil. This happens from a Mechaniſm peculiar to that Part, and defends

that

that very tender Membrane, the Retina, from being offended, dried, or ſcorched.

The flatter, therefore, the Cornea, the leſs it collects the Rays which fall upon it from one lucid Point, and the more it diſperſes them, ſo that the fewer in Number arrive at the cryſtalline Lens, and even thoſe very divergent, unleſs they come from a very remote Object: On the contrary, the rounder the Figure of the Cornea, the more it will unite the Rays which ſtrike upon it from one radiating Point, and the greater Number will it collect in the cryſtalline Lens, and thoſe very divergent. And hence you may aſſign one Reaſon for the Viſion of ſhort-ſighted and aged Perſons.

The cryſtalline Lens, after receiving the determined Rays from the Pupil, unites them ſtill more by a new Refraction, and renders them convergent, under the following Law, or Regulation, that thoſe Rays which proceed from one Point without the Eye, being here collected into one Point not far remote, are thence conveyed thro' the vitreous Humour to the Retina, on which they paint only that one Point preciſely from which thoſe Rays proceeded. If the cryſtalline Lens be very denſe, or round, the Point of Collection [the Focus] is too near the Lens, which creates Confuſion; if, on the other Hand, the Lens be too rare, or flat, the Point of Collection is too remote, whence a Confuſion is again occaſioned; and this affords us another Reaſon for the Viſion of old Perſons, and *Myopes*, or ſuch as are ſhort-ſighted.

From the two laſt Paragraphs we may account, or aſſign the Reaſons why ſhort-ſighted Perſons have their Sight helped by a concave dioptric Glaſs, or moving the Object nearer; and why aged Perſons ſee more diſtinctly thro' a convex dioptric Glaſs, or when the Object is more remote.

Both theſe Defects in the Perſons juſt mentioned, are, alſo, remedied by bringing the cryſtalline Lens to the Cornea, or removing it at a Diſtance; which Purpoſes ſeem to be anſwered two different Ways; as by compreſſing the Bulb of the Eye by a ſtrong Contraction of all the four Muſcles [See OCULUS] at once, whence the Bulb is lengthened; or by a Contraction of the Fibres which compreſs the vitreous Body, and elevate the Lens. There appears no other Method of anſwering theſe Intentions.

The Refraction which a Ray ſuffers in paſſing out of the Air into the Cornea, is nearly equal to what it ſuffers in paſſing out of Air into Water; and the Refraction of a Ray, paſſing from the aqueous Humour into the Lens, is equal to what happens to a Ray paſſing out of Water into Glaſs; whence the Alteration is inconſiderable: And, in the laſt Place, a Ray, paſſing from the cryſtalline Lens to the vitreous Body, ſuffers but little Alteration by Refraction, and, perhaps, none at all, when the vitreous Humor is pretty cloſely compreſſed; by which means, that Part becomes more denſe. Hence the principal, and moſt neceſſary Uſe of the vitreous Humor ſeems to be, that the Lens, by having free Space to move, might adjuſt and accommodate the Eye to different Diſtances, being itſelf a Subſtance of a leſs mutable Figure than the vitreous Body.

The End, or Deſign, of all this Apparatus, [of Humors and Refractions] is, that there may be a diſtinct and vivid Collection of thoſe Rays, which, proceeding from one Point of the Object, enter the Eye, and penetrate the cryſtalline Lens, in the Bottom of the Eye, directly under the Pupil, and that ſo there may be painted in this Bottom as many Points as were conſpicuous in the Image: Hence, the Picture, or Image, in Miniature, formed on the Retina, reſembles the Object.

And ſince the mucous Medulla of the optic Nerve has its Seat preciſely in this Place, directly under the Pupil and the Lens, it appears, that this is the Part which receives the Pictures, and, by a Continuation of the Impreſſion, preſents them to the common Senſory, and excites in the Mind the Idea of the Thing ſeen.

It appears, alſo, from what has been ſaid, that the Experiment of *Picard* and *Mariotte* is ſo far from diſproving what has been advanced in the preceding Paragraph, as ſome Authors have thought, that it is a clear Confirmation of it; and we have even Occaſion hence given us, to break forth into Praiſes of infinite Wiſdom in placing the Entrance of the Optic Nerve not in the Axis of Viſion, nor towards the exterior Angle of the Eye, but towards the Noſe, in a middle Altitude.

The Perfection, therefore, of Viſion, depends on ſuch a Figure, Tranſparency, Fabric, and Energy of the Solids, and ſuch a Denſeneſs and Tranſparency of the colourleſs Humors, as are qualified for collecting Multitudes of Rays from every viſible Point of an Object, unmixed with others, upon one diſtinct Point of the Retina, this Focus being formed neither too near, nor remote; and, in the next Place, on ſuch a Mobility of theſe Solids and Humors, in Conjunction, as is neceſſary for a clear and diſtinct painting of Objects placed at different Diſtances; for, with theſe Requiſites, their Size, Figure, Diſtance, Situation, Motion, Reſt, Light, and Colour, are very well repreſented. In the Retina there is, beſides, required ſuch a Situation, Expanſion, Quickneſs of Senſe, Tenderneſs, and Juſtneſs of Proportion, between the medullary, arterial, venous, and lymphatic Subſtance, as diſpoſe it for tranſmitting, by a free and ſound Optic Nerve, pure and perfect Images to the common Senſory.

There is, then, no Emanation of Rays from us, nor are they reflected from Objects back again upon us, as the *Stoics* aſſerted; nor is Sight performed by Emiſſion of a viſible Species from the Object towards us, as the *Pythagoreans* thought; nor by Emiſſion of Effluvia from the Object and the Eye meeting together, and, after mutual Embraces, reflected, as the *Platoniſts*, by an extraordinary Way of Ratiocination, endeavoured to prove; nor, laſtly, is it owing to a material Emanation of corporeal Images, as was the Opinion of *Epicurus*; but is performed in that ſimple and mechanic Way which we have above explained.

Queries on this Subject are ſuch as the following:

Why Objects placed at the leaſt Diſtance, in which the Eye can bear to ſee diſtinctly, appear moſt plainly?

Why, when removed thence to a great Diſtance, they appear diſtinctly, but affect us in a more languid manner? Why, alſo, when placed too near, they ſeem confuſed? What is neceſſary to a diſtinct, what to a ſtrong Viſion? And the like. Which are all eaſily anſwered, from the Premiſes. *Boerhaav. Inſtitut. Medic.*

VISNAGA.

The Characters are;

The Root is fibrous, and annual; the Leaves are broader, ſhorter, and blunter, than thoſe of Fennel. The Umbella is generally contracted, and cloſed; and the Seeds are much ſmaller than thoſe of Fennel.

Boerhaave mentions but one Sort of *Viſnaga*; which is,

Viſnaga. *Offic. J. B.* 3. 31. *Raii Hiſt.* 1. 456. *Boerh. Ind. A.* 49. *Gingidium umbella longa.* C. B. P. 151. *Gingidium Hiſpanicum.* Ger. 885. Emac. 1042. *Viſnaga Gingidium appellatum.* Park. Theat. 890. *Fœniculum annuum, umbella contracta oblonga.* Tourn. Inſt. 311. SPANISH PICKTOOTH.

This is a Plant of about a Cubit and an half in Growth, with the ſtriated, glabrous, and geniculated Stalk of the *Anethum*, and the ſmooth Leaf of the *Paſtinaca erratica*, but divided into larger Segments: The Umbellas of the Flowers are white, and their Pedicles, eſpecially the external ones, are above a Palm in Length, and are hard, and ſtiff; and each Pedicle, both internal and external, bears on its Top a new Umbella of numerous ſmall Pedicles; every Umbella, alſo, as well as every Top of a Branch, has ſmall Leaves ſubjacent at its Baſe; the Seed is ſmall, like that of the *Apium* of the Shops, and acrimonious.

It grows in *Italy*, *Sicily*, and the ſouthern Parts of *France*, ſpontaneouſly, but is cultivated, with us, in Gardens; and flowers in the Summer.

J. Bauhine mentions a *Gingidium Ægyptium* with larger and firmer Umbellas and Pedicles than thoſe which grow in our Gardens; and we, alſo, remember to have obſerved ſuch.

The Deſcription of the *Daucus Campeſtris*, in *Cæſalpinus*, agrees, in all Reſpects, with that which he had before given of the *Viſnaga* in the ſame Book; ſo that it ſeems quite the ſame Plant.

The Pedicles, or Footſtalks, of the Umbellas, on account of their Stiffneſs, and ſweet Scent, ſerve for Toothpicks with many Perſons, eſpecially among the *Spaniards*; whence we call it *Spaniſh Picktooth*. *Raii Hiſt. Plant.*

The Virtues, according to *Bauhine*, are the ſame with thoſe of *Fœniculum*, or Fennel. *Hiſt. Plant. adſcript. Boerhaav.*

VISQUEIRO. The Name of a *Braſilian* Tree, which affords a ſoft viſcous Reſin, uſed for Birdlime. *Raii Hiſt. Plant.*

VISUMARUS. A Name for the *Trifolium*; in *Marcellus Empiricus*, C. 3.

VITÆ BALSAMUM. See ELIXIR BALSAMICUM HOFFMANNI.

I have, by Miſtake, made a Reference to this Article, from BUSSII SPIRITUS BEZOARDICUS, and from many other Articles, which ought to have been to LIQUOR MINERALIS ANODYNUS. This the Reader is deſired to take Notice of.

VITALBA. A Name for the *Clematitis*; *ſylveſtris*; *latifolia*.

VITALIA. Cardiacs. *Blancard.*

VITALIS ACTIO. See ACTIO.

VITALIS FUNCTIO. See ACTIO.

VITEALIS CONVOLVULUS. A Name for the *Convolvulus*; *minor*; *arvenſis*; *flore roſeo.*

VITELLUS. The Yolk of an Egg. See OVUM.

VITEX.

The Characters are;

The Leaves run, as it were, into five Diviſions; and, in

European Plants, are caducous. The Flower is monopetalous, tubulous in the lower Part; in the upper, as it were, bilabiated, and diſpoſed in Spikes: The Ovary, which is ſeated in the Centre of an indented Calyx, becomes a globous Fruit, divided into four Capſules, containing oblong Seeds.

Boerhaave mentions ſix Sorts of *Vitex*; which are,

1. Vitex; foliis anguſtioribus, Cannabis modo diſpoſitis. See AGNUS CASTUS.

2. Vitex; foliis anguſtioribus; Cannabis modo diſpoſitis; floribus cœruleis. *H. L.*

3. Vitex; ſive Agnus; flore albido. *H. R. Par.*

4. Vitex; ſive Agnus minor; foliis anguſtiſſimis. *H. R. Par.*

5. Vitex; trifolia; minor; Indica; rotundifolia. *Breyn. Prodr.* 2. *Cara Noſi.* H. Mal. 2. *Negundo fœmina, Acoſtæ.* H. A. 1. 181.

This is a Shrub about a Man's Height, of the Bigneſs of a Peach-tree, according to *Garcias*; or of an Almond-tree, according to *Acoſta*; and growing in ſandy Places: The Root is fibrous, of a browniſh Colour without, and whitiſh within, with a thin Bark, of a bitteriſh, but when chewed awhile, of a ſomewhat acrimonious Taſte; the Leaves are generally three on one Pedicle, two oppoſite, and the third at the End of the Rib larger than the others; they are of an oblong-round Figure, cuſpidated in the fore Part, with an even Margin, moderately thick, ſoft, ſmooth, with their upper Face of a dark Green, but paler beneath, of a bitter and acrimonious Taſte, and a grateful Smell, much like Lavender: According to *Acoſta*, the Leaves have the Taſte and Smell of Sage: The Flowers grow many together on common Pedicles, out of Nodules, which are produced by Pairs in a decuſſated Order above the Origin of the Leaves; theſe Flowers adhere to ſhort Pedicles, are of a purple-ceruleous Colour, and have the ſame Smell as the Leaves, only briſker: They conſiſt of five ſhapeleſs Petals, with a Bell-ſhaped Neck; one of the Petals is erect and broad, but concave and hairy in the interior Part; the Neck of the Flower towards that Part of the Leaf has, alſo, its interior Part hairy; the other four Petals are expanded to almoſt their Breadth, and more like one another, only thoſe next the erect Petal are ſomewhat broader and rounder, the others towards the anterior Parts. The Flower is furniſhed with four erect, purple-ceruleous Stamina, which have blackiſh and arched Apices, and in the Middle a ſlender, purple-cæruleous Stile [Pointal], with a bifid Cuſpis, inflected towards a ceruleous Leaf, and taking its Original from the Rudiment of the Fruit [the Ovary] within the Calyx; the Calyx, which ſtraitly embraces the lower Neck of the Flower, conſiſts of five ſhort, faint-green, cuſpidated Leaves, and is ſtriated with ſlender Ribs, or Fibres, lengthwiſe: The Fruits are round, and ſomewhat oblong Berries, of the ſame Smell with the Flower, the greateſt Part of the Berry comprehended within the Calyx, and of a faint-green Colour; but the upper Part, which appears above the Calyx, is at firſt rediſh and ſhining, but afterwards, when dry, of a black Colour, like Ink: In the Middle is an oblong-round Stone, under a green and hard Pulp, which is not thoroughly ſoftened with Maturity; the Stone contains a whitiſh, taſteleſs Kernel.

The Oil of the Root, by Diſtillation, is clear, ſomewhat greeniſh, of a ſweet, acrid, penetrating Taſte, and void of Smell.

This Tree, ſays *Acoſta*, is of ſuch frequent Uſe in Medicine in theſe Countries [*Malabar*, and the adjacent Parts], that unleſs it had pleaſed God that a manifold Increaſe of young Shoots ſhould ſucceed in the Room of thoſe Branches which are cut off, the Trees had long ago been conſumed, or, at leaſt, been extremely dear and ſcarce; but the more the Branches are lopped, the thicker they grow, and are always green.

The tender Branches, Leaves, Flowers, and Fruits, bruiſed, and boiled in Water, or fried or boiled in Oil, are ſucceſsfully applied to all Pains, proceeding from what Cauſe ſoever, but eſpecially to Pains of the Joints from a cold Cauſe; and in Tumors and Contuſions they have ſurpriſing Effects. Some apply the ſame to Wounds, and affirm, that in one Night it has removed the Pain, and digeſted the Matter,

The bruiſed Leaves are applied to old Ulcers with good Succeſs; for they digeſt the contained Matter, cleanſe the Ulcer, and cicatrize it; and they are really found to be of ſuch Uſe in Wounds, Abſceſſes, and Contuſions, as to render the Aſſiſtance of a Surgeon unneceſſary. The Women waſh their whole Bodies at all Seaſons with the Decoction of the Leaves, and are ſo firmly perſuaded that the Flowers, Leaves, and Fruit of the *Negundo*, have a Virtue of promoting Conception, that they would ſtone any Perſon who ſhould endeavour to convince them of the contrary. The Leaves uſed in Maſtication amend a fetid Breath. Thus far *Garcias* and *Acoſta*. *Raii Hiſt. Plant.*

b. Vitex; trifolia; minor; Indica; ſerrata. *Breyn. Prodr.*

2. *Bemneſi.* H. Mal. 2. Raii Hiſt. 2. 1575. *Negundo mas Acoſtæ.* H. A. 1. 179. *Boerh. Ind. alt. Plant.*

The Leaves of this Species grow by Threes and Fives on Pedicles, and are of an oblong and pretty narrow Figure, and contracted into an acute Point, but rounder and broadeſt at the Pedicle: In their fore Part they are more or leſs finely crenated, of a darkiſh-green Colour, but clearer in the upper Part; the largeſt Leaf is at the Extremity of a Rib; the two next, which are larger than the others, adhere to the Middle of the Rib by Pedicles not an Inch in Length; the other two Leaves are very ſmall, and ſeated on the common Pedicle: In its other Characters it agrees with the preceding; its ſerrated Leaves, reſembling thoſe of the *Sambucus*, ſhew it to be the *Negundo mas* of *Garcias* and *Acoſta*. *Raii Hiſt. Plant.*

The Seeds of the Vitex are effectual in the Hyſteric Paſſion; and provoke Urine, and the Menſes. *Hiſt. Plant. adſcript. Boerhaav.*

VITICELLA. A Name for the *Bryonia alba.*

VITILIGO. A Species of white Leproſy. See LEPRA.

VITIS.

The Characters are;

At the Joints of the Branches ſhoot forth Tendrils which claſp and twine themſelves about whatever lies in their Way; the Flower is roſaceous, pentapetalous, and furniſhed with five Stamina; the Ovary grows in the Bottom of the Flower, is furniſhed with a ſhort, hairy Tube, and becomes a ſoft, ſucculent Berry, containing ſeveral Seeds, generally four; the Flowers and Fruit are diſpoſed in Cluſters.

Boerhaave mentions twelve Sorts of *Vitis*; which are,

1. Vitis; ſylveſtris; Labruſca. *C. B. P.* 299. *Labruſca. Lemery's Hiſt. des Drogues.*

This is a Species of Vine which grows, without cultivating, by the Sides of Highways, and near Hedges; it bears a very ſmall Grape, which, when ripe, becomes black, and ſometimes ripens not at all.

The Plant is deterſive and aperitive, and its Fruit is aſtringent. *Lemery des Drogues.*

2. Vitis; vinifera; ex cujus Uvis acerbis, immaturis, Omphacium exprimitur. *Boerh. Ind. A.* 2. 232. *Vitis.* Offic. Ind. Med. 124. *Vitis Vinifera.* Mont. Ind. 55. THE VINE.

The Vine is ſo well known to every Body, that it would be needleſs to ſpend time in deſcribing it: With us it generally runs up the Sides of Houſes, or Walls; in the Wine Countries it is planted in Vineyards, as a Standard Tree. The Differences of the Grapes, which grow on them, are almoſt as many as the Countries they grow in, as to their Colour, Taſte, and Largeneſs; and there is as great a Diverſity in the Wines produced from them. Amongſt theſe, the Canary, the Malaga Sack, and the Alicant, for ſweet Wines, are reckoned beſt; the Sherry and Mountain, for dry Stomach Wines; the Red and White Port, and the French, to drink with Food, are moſt in Eſteem; and to theſe, for their Excellency, and grateful Taſte, may be added the Muſcadine, the Smyrna, and Cyprus Wines.

As to the Nature and Uſe of Wine, there have been ſo many Volumes written about them, that it would be ſuperfluous to ſay much here: Moderately uſed, it is very cordial, and of great Service to Mankind. It ſtrengthens the Stomach, helps Digeſtion, comforts the Bowels, and is the beſt Preſervative againſt the Plague. *Miller's Bot. Off.*

The Vine is reckoned, by *Theophraſtus* and *Varro*, among Trees; but becauſe it ſtands in need of Aſſiſtance, and muſt be forced to trail on the Ground unleſs it meets with ſomething to lay hold of, in order to ſupport itſelf, it can hardly deſerve the Name of a Tree, tho' its Trunk ſometimes grows to the Size of a Man's Leg, or, perhaps, Thigh. The Antients numbered it among Trees, with reſpect to its Bigneſs, in which it really exceeds ſome Trees, according to *Pliny*'s Account of it, *Lib.* 14. *Cap.* 1. There is to be ſeen, he ſays, in the City *Populonia*, an Image of *Jupiter*, made out of one Vine, which has ſtood uncorrupted for many Ages. At *Maſſilia* [*Marſeilles*] is a public Drinking-bowl, of the ſame Wood; and at *Metapontum* the Temple of *Juno* is ſupported by Pillars made of the Wood of the Vine. The Staircaſe by which you aſcend to the Temple of *Diana*, at *Epheſus*, is made, as they ſay, of the Wood of a ſingle Vine, in the Iſle of *Cyprus*, where Vines grow to an extraordinary Bigneſs: Nor is there any Wood of a more durable Nature. There is no End of the Growth of this Plant; a whole Houſe, or Villa, has been incompaſſed and overſpread with the Branches and ſequacious Tendrils of a ſingle Vine. At *Rome*, in the Portico of *Livia*, one Vine, extending itſelf upon Poles, overſhades the whole open Walk; and the ſame Vine has yielded twelve Amphoras of Muſt: They over-top the Elms in every Place; and it is reported, that *Cyneas*, the Ambaſſador of King *Pyrrhus*, admiring the Height of the Vines at *Arpinum*, but diſliking the

auſtere Taſte of the Wine, merrily ſaid of it, that its Mother deſerved to hang on ſo high a Gibbet. Thus *Pliny*.

C. Bauhine divides the *Vitis* into the *Sativa* and *Sylveſtris*; or cultivated and wild: Of the *Sativa*, or cultivated, there is the *greater* Sort, of which there are very many Species, and the *leſs*. The Grapes of the larger differ in Colour and Size; for in ſome they are green, in others whitiſh, or of a deep yellow, or a deep black-red, or ceruleous, or a light-red. As to Form and Size in ſome Species, the Grapes are oblong, and of the Size and Shape of Prunes, and this Sort may be called *Pergulana* (perched, or ſtaked up); of others the Grapes are round, and bigger or ſmaller; ſome again have no Grain, or Stones, others a ſingle one, or perhaps two; a bearded Grape is more rarely to be met with. The leſſer Sort of *Vitis* bears a black Grape, very ſeldom white or yellow, with a very ſmall ſoft Kernel; they differ, alſo, in Taſte; ſome are ſweet, others ſharp, others of a muſky Taſte, ſuch as the *Vitis Apiana* of *Pliny*.

There is a Difference, alſo, in the Leaves; for ſome are larger, and more deeply cut, as the *Italica*, the Leaves being cut home to the Pedicle, and divided into acute Lobes; others are of a leſs Size. Some again are thinner, others thicker; ſome green, others red; others ſpotted; ſome hard to the Touch, others ſoft; ſome ſmooth, others a little hairy. Thus *C. Bauhine*.

Of the Kinds of Grapes *Pliny* thus briefly ſpeaks: The Kinds of Grapes, in reſpect of Size, Colour, Taſte, and Kernels, are innumerable, and they are ſtill multiplying upon us; here they glitter in Purple, there they ſparkle in Roſe-colour, or ſhine in Green; the whitiſh and the black Sort are common; the *Bumaſti* ſwell like turgid Breaſts, and others run into Length with long Kernels like thoſe of Dates, and ſo on.

That the Kinds of the *Vitis*, as well as of the Pear-tree and Apple-tree, are innumerable, was acknowledged by the Antients; ſince, as *Pliny* truly ſays, they are almoſt as many as the Differences of Soil, and new Sorts are produced every Day, and ever will be produced; but it would be extremely difficult, not to ſay impoſſible, to accommodate the antient Names of Vines to the moſt noted and cultivated modern Species, and, therefore, we ſhall not attempt it. as having neither Means nor Leiſure for ſuch an Undertaking.

3. Vitis; Corinthiacæ; ſive Apyrina. *J. B.* 2. 72. *Boerh. Ind. A.* 2. 232. *Uvæ paſſæ minores, Paſſulæ.* Offic. *Uvæ paſſæ minores, vel Paſſulæ Corinthiacæ.* C. B. P. 299. *Corinthiacæ.* Park. Theat. THE CURRANT VINE.

Theſe are a ſmaller Sort of Grapes, which took their Name from their growing in Plenty about *Corinth*, though we have them principally from *Zant* and *Cephalonia*; theſe they only gather off the Bunches, and lay them to dry in the Sun, and ſo put them up in large Buts.

Both theſe, and the *Uvæ paſſæ majores*, are opening and pectoral, helpful againſt Coughs and Conſumptions.

The Currants are more uſed in the Kitchen, than in Medicine. *Miller's Bot. Off.*

Currants are of a temperate Quality, mitigate the Heat in Fevers, allay Thirſt, and looſen the Belly. *Dale.*

4. Vitis; Apiana; Plinio. *C. B. P.* 298. *Uva Muſchatella.* Car. Step. Præd. Ruſt. 342.

5. Vitis; Pergulana; acinis Prunorum magnitudine & forma. *C. B. P.* 298.

6. Vitis; folio Apii. *J. B.* 2. 73.

7. Vitis; alba; dulcis. *J. B.* 2. 73.

8. Vitis; Frontiniaca. *C. B. P.* 299.

9. Vitis; nigra; dulcis; Vintint dicta.

10. Vitis; multiplex; alia; pro diverſitate, quæ obtinet in acinis ratione coloris, ſaporis, magnitudinis, admodum vari cultuque induſtrii Vindemiatoris ſemper novâ.

11. Vitis; quinquefolia; Canadenſis; ſcandens. *T.* 613. *Edera, quinquefolia Canadenſis.* Corn. 100.

12. Vitis; vulpina dicta; Virginiana; alba. *Pluk. Alm.* 392. *Boerh. Ind. alt. Plant.*

The Leaves, with the Tendrils of the Vine, being bruiſed, and applied, mitigate Pains of the Head, and with Polenta, cool the burning Heat and Inflammation of the Stomach. The Leaves applied alone have the ſame Effect, as being of a refrigerating and aſtringent Quality. The Juice of the ſame drank, is effectual in the Dyſentery, Spitting of Blood, the Stomachic Paſſion, and the Green-ſickneſs. The Tear of the Vine, which is a ſort of Gum, and concretes about the Stock, taken in Wine, expels the Stone, and uſed by way of Unction, cures the Lichen, Pſora, and Leproſy, firſt prepared by an Affriction of the Parts with Nitre. The ſame with Oil, frequently uſed to anoint the Hair, has the Effect of a Pſilothrum; but the moſt efficacious for that Purpoſe is, the Liquor diſcharged from the green Sprays by Exudation when burning, which, alſo, removes *Myrmecia* [a kind of little black Warts]. The Aſhes of the Sprays, with the expreſſed Huſks of the Grapes in Vinegar, cure a Condyloma and Thymus, affecting the Parts about the Anus, being anointed with it. The Tame is effectual in Luxations, and the Bites of Vipers, and applied with Oil of Roſes, Rue, and Vinegar, is good for an Inflammation of the Spleen. Botaniſts aſcribe ſtill more Virtues to the Aſhes and Lixivium prepared of them; but there ſeems to be but little Difference between the Aſhes of Woods and their Lixivia, except in their containing more or fewer Salts to emit them.

Grapes, in the Opinion of *Galen*, are the chief of all autumnal Fruit, more nutritive than any of the fugacious Sort, or ſuch as will not keep, and have leaſt of a bad Juice, eſpecially when perfectly ripe.

All freſh Grapes diſturb the Belly, and inflate the Stomach, for which Reaſon they are forbidden to be eaten in Fevers; but after they have been gathered and hung awhile, they are more innocent, and not only good for the Stomach, but reſtore a loſt Appetite, and conſequently are of Service in Languiſhings; they, alſo, render the Body ſoluble. But there is a very conſiderable Difference in Grapes: The ſweet are moſt nutritive, and fatten the Body, cauſe Inflations in the Stomach, and provoke to Stool; auſtere Grapes, on the contrary, nouriſh but little, and bind the Belly. *J. B.*

I remember to have read ſomewhere of a *German* Matron, who, during the whole Time of Vintage, which laſted a Month or two, in which ſhe lived upon Grapes, never uſed to drink, which ſhews that Grapes are good to quench Thirſt.

Every body knows, ſays *Palladius*, that the larger Grapes, which make the fineſt Shew, and are of an hard and dry Grain, are brought to the Table; but the moſt fruitful, which have the tendereſt Skin, and the richeſt Taſte, and eſpecially ſuch as ſooneſt fade, are ſet aſide for the Preſs.

Vitis, according to *Donatus*, in *Eunuch.* comes from *Vieo*, which *Feſtus* expounds by *alligare*, to tye; and *Nonius*, by *vincire*, to bind about; and *inflectere*, to inflect or bend. *Raii Hiſt. Plant.*

The diſtilled Water of the Tops of Vines cut in the Spring, is aperient, deterſive, and of Service in the Stone, and Nephritis; and, uſed externally, is good to deterge the Eyes. The Leaves and Tendrils are aſtringent and refrigerating, and proper in a Diarrhœa and Hæmorrhages, and are uſed in Fomentations of the Feet; the young Branches or Sprays, are aperitive. The immature Fruits of the Vitis are called *Agreſtæ*, and the mature *Uvæ*, which increaſe an Appetite, and provoke to Stool. The Fruits dried in the Sun, are called *Uvæ paſſæ*, or *Paſſulæ*, the largeſt of which are the *Uvæ Damaſcenæ*, the ſmaller *Uvæ Corinthiacæ*, which latter are ſerviceable in Coughs, and to expectorate Phlegm, and to render the Body ſoluble. The Leaves boiled, are aſtringent; the Water, which diſtils ſpontaneouſly from the Plant, deterges cutaneous Deſedations of the Face. The Tartar extracted from *French* Wines, is red; from *German* Wines, white. *Hiſt. Plant. adſcript. Boerhaav.*

There are ſeveral Sorts of Raiſins uſed, though *Dale* mentions only the two following:

1. *Paſſulæ Damaſcenæ.* Offic. *Paſſulæ maximæ; ſive Damaſcenæ, Zibebæ dictæ.* Schrod. IV. p. 172. *Vitis Damaſcena.* Hort. Reg. Par. 186. Tourn. Inſt. 613.

The *Zibebæ* ſtoned, and infuſed in a convenient Quantity of Spring-water, or a proper diſtilled Water, make a grateful Sort of Drink for ſick Perſons, and good to quench Thirſt. The Stones have an aſtringent Virtue, and are proper in Vomitings and Fluxes of the Belly, whether uſed internally or externally; they are roaſted and triturated for theſe Purpoſes. *Schrod.*

2. UVA PASSA MAJOR. Offic. *Uva paſſa major Βάρας & Græcis ſorte. C. B. P.* 299. RAISINS OF THE SUN.

Raiſins of the Sun are made of the Grapes after the following manner: Cut the Stalks off the Bunches they deſign for that Uſe almoſt in two in the Middle, and by that means hinder the Sap from coming to them in any Quantity, and let them hang thus on the Branches, till by Defect of Nouriſhment, and the Heat of the Sun, they are ſufficiently cured; when they are put up into Caſks for Uſe. The *Malaga* Raiſins are managed another Way: They dip the Bunches of ripe Grapes in a boiling-hot Lye, made of the Aſhes of Vine-ſtalks, taking them out preſently, and then lay them on Boards in the Sun to dry, and afterwards they are packed up in Frails. *Miller's Bot. Off.*

Raiſins of the Sun, as well as the *Zibebæ*, and Currants, are all hot or temperate, lenient, looſen the Belly, correct Acrimony, are grateful to the Stomach, Lungs, and Liver, and mitigate a Cough. *Schroder.*

Raiſins, by their acrimonious and penetrating Heat, vellicate the Teeth and Gums, and do them no ſmall Injury, by diſpoſing them, when frequently eaten, to Putrefaction. *Raii Hiſt. Plant.*

VITIS ALBA. See BRYONIA ALBA.

VITIS IDÆA.

The Characters are;

The Flower is monopetalous, Bell-shaped, and has growing in it a globous Ovary, which becomes a soft umbilicated Berry, full of Juice, and containing small Seeds.

Boerhaave mentions five Sorts of *Vitis Idæa*; which are,

1. Vitis Idæa; foliis oblongis; crenatis; fructu nigricante. *C. B. P.* 470. *Tourn. Inst.* 608. *Boerh. Ind. A.* 2. 71. *Myrtillus.* Offic. *Vitis Idæa angulosa.* J. B. 1. 520. *Raii Hist.* 2. 1488. Synop. 3. 457. *Vaccinia nigra.* Ger. 1229. Emac. 1415. BLACK WORTLES, or BILL-BERRIES.

The Bill-berry Bush is a small low Shrub about a Foot high or more, with many tough, flexible, angular green Twigs, bearing small, oblong, round-pointed Leaves, crenated about the Edges, among which the Flowers grow singly on short Foot-stalks, of a red dull Colour, in Shape of a Bottle, which are succeeded by round umbilicated Fruit, as big as Juniper-berries, and much of their Colour, full of a pleasant sweet purple Juice. It grows in Heaths among Fern, in a boggy Soil, and in thin woody Places; and flowers in *May*, and the Fruit is ripe in *July*. The Fruit only is used, and that but seldom in the Shops.

Bill-berries are cooling, binding, and grateful to the Stomach, and of use in Fluxes or Hæmorrhages. *Simon Paulli* says, they are much used against the Scurvy in *Norway*, and other Northern Countries. An agreeable Syrup may be made of the Juice, and used in all the fore-named Intentions. *Miller's Bot. Off.*

These Berries, according to *Dodonæus*, are cold and drying, with a manifest Astriction. They are good for an hot Stomach, quench Thirst, mitigate the Heat of burning Fevers, bind the Belly, stop Vomiting, cure a Dysentery proceeding from yellow Bile, and are effectual in the Cholera Morbus. But for these Purposes the Rob or Juice, inspissated with Sugar or Honey, is far preferable to the Berries, because these being of a cold Nature, being eaten crude, are offensive to a cold and weak Stomach, and disturb rather than bind the Belly. But *Casp. Hoffman* thinks, that the Berries which grow in the Sunshine, and are throughly ripe, are by no means of so cold a Nature as to injure a cold Stomach by their Crudeness.

The same Author is of Opinion, that the black Wortle-berries may rightly and regularly be substituted in the room of Myrtle-berries with these Conditions: First, that you take such as grow in Northern Countries, and not in *Italy* or *Spain*: Secondly, that they be not perfectly ripe: Thirdly, that they be not green or fresh gathered, but dry'd: Lastly, that you take not the crude Juice, which is considerably refrigerating from its immoderate Aqueousness, and somewhat astringent, but inspissated into a Rob.

That this Juice is of fine Parts, and vehemently astringent, is evident from the Marks or Stains which it leaves on the Hands and Mouths of those who eat the Berries, and which can hardly be washed out; hence it is used to dye Linen and Paper of a cerulean or sky-blue Colour.

The Shepherds and Peasants, who are Inhabitants of mountainous Countries, delight to eat the Berries; for their Sweetness is accompanied with an Acidity, which is very grateful to the Palate. *Raii Hist. Plant.*

2. Vitis Idæa; Zeylanica; odoratissima. *T.* 608. *Myrtus Zeylanica, odoratissima, Baccis niveis, monococcis.* H. L. 435.

3. Vitis Idæa; Æthiopica; Buxi minoris folio; floribus albicantibus. *H. A.* 1. 125. *Buxus, Africana, folio oblongiori, non serrato.* Indic. 238. H. R. D.

4. *An* Vitis Idæa; foliis Myrti angustissimis; longis; alternis?

5. *An* Vitis Idæa? *Quæ Buxus, Africana, rotundifolia, serrata. P. B. Prodr.? Pluk. Phyt. T.* 18. *H. R. D. Boerh. Ind. alt. Plant.*

It is called *Vitis* from its tough flexible Branches, with the Epithet of *Idæa*, because in former Times it grew plentifully on Mount *Ida*.

The Berries are astringent, and useful in the Diarrhœa and Dysentery: Of the expressed Juice is prepared a Rob, which is excellent for these Distempers. *Hist. Plant. adscript. Boerhaav.*

Besides the foregoing Species of *Vitis Idæa*, *Dale* mentions the following;

VACCINIA. Offic. *Vaccinia nigra fructu majore.* Park. Theat. 1455. *Vitis Idæa magna quibusdam, sive Myrtillus grandis.* J. B. 1. 518. Raii Hist. 2. 1487. Synop. 3. 457. Tourn. Inst. 608. *Vitis Idæa foliis subrotundis exalbidis.* C. B. P. 470. *Vitis Idæa foliis subrotundis.* Ger. 129. Emac. 1416. THE GREAT BILL-BERRY.

This Plant is pretty shrubby, with a Multitude of round, ramous Branches, a Cubit and half in Length, covered with a light-red Bark, and of a pretty solid and close Substance. *Clusius* says the Branches sometimes spread on the Ground, are tough, and covered sometimes with an ash-coloured, sometimes a reddish Bark. The Leaves are of the Size of those of the common *Vitis Idæa angulosa*, oblong, but round, glabrous, and not at all serrated like those of the other, somewhat glaucous in the lower Part, or, according to *Clusius*, whitish and venous, of an astringent and somewhat acid Taste, and caducous. The Flower is like that of the common Sort, White inclining to Purple, concave, the Lips being cut into five Lobes, reflexed outwards, and furnished with its proper Stamina. The Berries, which are equal to those of the Juniper, or *Myrtus Tarentina*, have a broader Umbilicus, whence proceeds an Apex; whence it happens, that the Berries are not so round as those of the common *Vitis Idæa*. They adhere to pretty long Pedicles, are of a grateful, subacid, and vinous Taste, and contain some minute yellowish Grains. The Root is hard, ligneous, and abounds with capillary Fibres.

It delights in cold and mountainous Places: *Clusius* found it among the *Austrian* and *Stirian* Alps; and *John Bauhine* in the Mountains of *Burgundy*, and other like Places. We have observ'd it in the mountainous Parts of *Cumberland*, and in great Plenty near *Gamblesby* six Miles from *Perith*, in the marshy Pastures on both Sides of the Road.

The Hunters and Ploughmen ascribe an inebriating Quality to the Berries, as we are assured by *Du Choul*, *Camerarius*, and others, especially when eaten pretty freely. The Leaves and Branches are of the same Use to the *Silesian* Dyers, as the *Sedum Alpinum* to those who live in the Countries amongst the *Alps*. *Raii Hist. Plant.*

VITIS MARINA. See FUCUS MARINA.

VITIS NIGRA. See BRYONIA NIGRA.

VITIS SYLVESTRIS, *trifolia.* A Name for the *Toxicodendron*; *triphyllum*; *glabrum.*

VITIS VINIFERA. See VITIS.

VITISALTUS. The same as CHOREA SANCTI VITI.

VITREA TABULA. The internal Table of the *Cranium.* See CAPUT.

VITREUS HUMOR. The vitreous Humour of the Eye. See OCULUS.

VITRIFICATIO. Vitrification; that is, the Conversion of any Body into Glass.

VITRIOLUM. Vitriol.

Dale mentions three Sorts of Vitriol; which are,

1. *Vitriolum cæruleum seu Romanum.* Offic. *Vitriolum cæruleum.* Charlt. Foss. 11. *Vitriolum Cyprinum cæruleum.* Worm. 25. *Chalcanthum Cyprinum.* Aldrov. Mus. Metall. 339. Matth. 1363. *Atramentum cæruleum Romanum coctum.* Kentm. 14. BLUE, or ROMAN VITRIOL, and CELESTIAL STONE.

It is a chrystalline Substance, ceruleous, or resembling the Sapphire, compact like Sugar-candy, and of an acid, austere, acrid, and astringent Taste. It is either made of a Solution and Crystallization of Copper, or imported from *Cyprus* and the *East-Indies.*

Roman Vitriol is heating, drying, highly astringent, and corrigipating, provokes Vomiting, and expels Worms. *Schroder.* This Sort is esteemed the best for Medicinal Use, and is very much commended for the Scabies and Ulcers contracted from the *Lues Venerea. Worm.* It is the Basis of *Digby*'s sympathetic Powder, and cures the Scabies and Lepra.

2. *Vitriolum viride.* Offic. Charlt. Foss. 11. *Vitriolum viride seu Romanum.* Tourn. Matth. Med. 185. *Chalcanthum viride factitium; Atramentum Sutorium Officinarum.* Schw. 373. *Atramentum viride durum solide coctum.* 13. GREEN VITRIOL, or COPPERAS.

This, also, is a crystalline Substance, but of an herbaceous Colour, and more granulated and grumous like common Salt: It has the Taste of the preceding.

There are two Sorts of *Green Vitriol.*

3. VITRIOLUM ALBUM. Offic. Worm. 25. Geof. Prælect. 106. Charlt. Foss. 11. *Chalcanthum candidum.* Aldrov. Mus. Metall. 339. *Atramentum album durum fossile.* Kentm. 13. WHITE COPPERAS.

White Copperas is a white granulous Substance, concreted like white Sugar, of the Taste of *Green Vitriol*; it is imported to us from *Germany*, being found in the Mines of *Goslaer*, of the Figure of Icicles, and transparent.

It agrees in Virtues with *Green Vitriol*; but is more used in Collyria than the other Vitriols. There is, also, prepared an excellent Emetic of *White Copperas* dissolved in Water, and coagulated by boiling to the Consistence of White Sugar, as we are informed by *Geoffroy Prælect.* 106. who thinks *Tournefort* mistaken in affirming, that it is made of *English Vitriol* dissolved in Water, and boiled till the Water is evaporated; what remains consisting of pretty large grumous Masses resembling White Sugar, which being exposed to the Air, assume a yel-

a yellowiſh Colour on the Outſide. This *Vitriol* is of great Uſe in Styptic Waters, in Dying, and in making Ink. *Dale.*

Some derive the Name *Vitriol* from *Vitrum*, becauſe it has the Colour and Tranſparency of Glaſs; in *Greek* it is named χαλκανθὸς, as if it were an Efflorescence of Braſs; and in *Latin Atramentum Sutorium*, becauſe it is uſed in blacking Leather. Vitriol is either natural or factitious. The former is found in Cryſtals, or Striæ, ſticking to the Roofs of Mines; and the latter is made by boiling the vitriolic Veins of ſome mineral Ores in Water, and afterwards letting them ſtand in the Cold to cryſtallize; or by corrupting and fermenting the *Pyrites*, or Marcaſite, and then mixing it with Water, from which Vitriol is afterwards obtained by Coction and Cryſtallization. This Way of making Vitriol ſeems to have been unknown to the *Greeks*.

White Vitriol is brought from *Germany*, made up in Loaves, like Sugar, and is of a ſweetiſh aſtringent Taſte: They are miſtaken who think that white Vitriol of *Goſlar* is only the Green, calcined by the greateſt Degree of Fire; for it is found in proper Mines, like a downy Efflorescence, which being diſſolved in Water, to a due Conſiſtence, is afterwards boiled till it concretes into a white Maſs, like Sugar. Sometimes little Pieces of it are found in the ſame Mines, tranſparent like Cryſtal. This Vitriol contains an imperfect Iron Ore, or, perhaps, an Iron Ore mixed with Calamine or Lead. Blue Vitriol is dry to the Touch, and concreted into blue Cryſtals, like Sapphires, of a rhomboidal Figure, flattened, and conſiſting of ten Sides. It is brought from ſeveral Places, eſpecially from *Hungary* and *Cyprus*; and its beautiful blue Colour is owing to the Copper which it contains. The Taſte of it is very acrid and auſtere. Green Vitriol has different Names, from the different Places where it is found; as *Roman*, *Swediſh*, *Engliſh*, and *French*. It contains a large Portion of Iron, from whence its green Colour is derived: It is kept in the Shops, either in large rhomboidal Cryſtals, or in Heaps of ſmall cryſtal Grains, ſometimes a little unctuous, and ſticking to the Hands. It is of an acid ſtyptic Taſte; and indeed it cannot well be ſuppoſed to have any other, Vitriol being an acrid Salt, which having corroded Iron or Braſs coagulates with them, and concretes into a pellucid Maſs, either of a green or blue Colour, according to the Metal which it has diſſolved. Some Authors mention likewiſe red Vitriol; but I have not been able to learn what it is.

Vitriol is obtained by various Arts from Waters, Earths, vitriolic Stones, and eſpecially from the *Pyrites*. In *Galen*'s Time, blue Vitriol was made in *Cyprus*, by the Heat of the Sun exhaling the Humidity of a vitriolic Water. In ſome Places of *Hungary*, the ſame Vitriol is now made by boiling and evaporating a Water of the ſame Kind, and the green Vitriol is made by a Method not much different, in other Places of *Germany*. In ſome Places it is made by frequent Ablutions of an Aſh-coloured Earth, marked with Spots of different Colours; ſome of which look like the Ruſt of Iron, others like Verdegriſe, with a ſtrong ſulphureous Smell, and an unpleaſant bitter Taſte: This Vitriol is therefore compoſed of a Mixture of Iron and Copper; and accordingly its Colour is a Mixture of Blue and Green. In *England*, at the Diſtance of about a League from *London*, green Vitriol is made from the *Pyrites*, which are heavy denſe Stones of a dark Colour on the Outſide, but their inner Surface is radiated from the Centre to the Circumference, the Rays ſhining like *Bath* Metal: They are perfectly inſipid to the Taſte, and by being expoſed to the open Air, for a ſufficient Length of Time, they acquire an inward Kind of Fermentation, and ſpontaneouſly fall to Pieces. In the Cracks or Openings, we obſerve a certain Sort of white, ſaline, downy Efflorescence, of an acid ſtyptic Taſte. Afterwards the whole Subſtance of the Stone is diſſolved, and falls into a fine Powder of a ſaline and vitriolic Taſte, and ſulphureous Smell. If freſh *Pyrites* be burned, and calcined in the Fire, the Fumes which they emit ſmell like Brimſtone, and a red Calx remains, which contains ſome Iron and Copper. The Way of extracting Vitriol from the *Pyrites* is this:

The entire Stones are ſpread about in a large Area, the Height of about three Feet; and there they lie expoſed to the Air for three Years, being turned one in ſix Months, that the Rays of the Sun may calcine them the better, and the Rains penetrate them more eaſily. By this means they are reduced to a vitriolic Earth, which being well waſhed with Rain-water, the Liquor is afterwards conveyed by Pipes into Ciſterns: Then they boil it to a due Conſiſtence, in large leaden Veſſels, throwing in a Quantity of old Iron, which is preſently conſumed by the Lixivium. Afterwards the Liquor is ſet to cool in other Leaden Veſſels, with Sticks fixed a-croſs, about which the Vitriol cryſtallizes.

The *Pyrites* of *Sweden* and *Liege* are very full of Sulphur, and the Way of preparing Vitriol from them, ſhall be related in ſpeaking of that Mineral. Sulphur is obtained from theſe *Pyrites*, *per Deſcenſum*, and then the remaining Maſs is calcined, and afterwards made into a Lixivium; which being ſtrained, is boiled in leaden Veſſels, and then ſet to cryſtallize, as before, in a cold Place.

A Solution of Vitriol turns the Tincture of *Heliotropium* into a faint purple Colour, coagulates Milk, turns Syrup of Violets to a greeniſh Colour, but does not change a Solution of corroſive Sublimate. When it is mixed with a Solution of Salt of Tartar, or Lime-water, the Colour becomes a little yellowiſh, and it communicates a black or dark-purple Tincture to the Infuſion of Galls, which indeed is peculiar to Vitriol.

By Diſtillation an acid Spirit is obtained from Vitriol, by a very great degree of Fire, called by the Name of the *Spirit* or *Oil of Vitriol*, which turns the Tincture of *Heliotropium*, and Syrup of Violets, to the Colour of Fire, coagulates Milk and Blood, and raiſes a ſtrong Fermentation and Heat with any alcaline Salt. The Oil of Vitriol, or that ſtrong acid Liquor obtained from it by Diſtillation, when mixed with common Water, raiſes an intenſe Heat; with Sal Ammoniac it raiſes an Effervescence, but generates Cold, though the Fumes that ariſe feel hot.

After this Diſtillation is over, a blackiſh or red Earth remains in the Retort, called *Colcothar*, and it is the Calx or Crocus of either Iron or Copper, according to the Nature of the Vitriol that hath been diſtilled. From this Proceſs it is evident, that Vitriol is compoſed of an acid Salt, ſubdued by metallic Parts; which is, alſo, eaſily demonſtrated from the artificial Ways of producing Vitriol. If Spirit of Vitriol be poured on the Filings of Iron, a very good Vitriol is obtained; and if Copper Plates, ſtratified with Sulphur, be calcined in a Crucible, the Water in which this Calx is made to boil for ſome time, if evaporated, will leave behind a true blue Vitriol.

The Virtues aſcribed by Chymiſts to Vitriol are paſt Belief; neither do we find the Event to anſwer their Promiſes. *Dioſcorides* mentions an emetic Quality of it; and ſays, that, diſſolved in Water, it is good againſt Worms in the Inteſtines, and after eating poiſonous *Fungi*. He tells us farther, that this Solution, ſnuffed up the Noſe, purges the Head, and reckons it among the aſtringent, heating, and cauſtic Medicines. *Pliny* commends it in Diſeaſes of the Eyes, Fluxes of the Blood, and for the Cure of Ulcers, and *Galen* made Uſe of it in Collyriums. At preſent it is uſed as an Emetic, Vermifuge, Styptic, Detergent, and Antiphlogiſtic; but is ſeldom given inwardly without Preparation. Externally, white Vitriol is principally uſed in Collyriums, to allay an Inflammation of the Eyes, and ſtop their Running; and it is thus preſcribed:

Take of white Vitriol, one Scruple; of Roſe or Plantain-water, one Ounce: Let the Vitriol be diſſolved in the Water, and ſtrain the Solution, which, if it be too acrid, may be made milder, by the Addition of more Water. Or,

Take of the common or *Florentine* Orris, a Scruple; Roſe and Plantain-water, of each three Ounces: Boil them over a gentle Fire till a third Part be conſumed; and in the ſtrained Liquor diſſolve eight Grains of Vitriol for a Collyrium.

Powder of blue Vitriol is applied to the Extremities of the bleeding Veſſels in Wounds, and ſtops the Bleeding, by cauterizing the Veſſels, and coagulating the Blood.

Among the Preparations of Vitriol, the firſt is Purification, called *Gilla* of Vitriol, in which white Vitriol is moſtly made uſe of; it is purified by Solutions, ſtraining and drying, twice or thrice repeated; and then being taken, from a Scruple to a Dram at a Doſe, in a proper Vehicle, will excite Vomiting: This is recommended by *Paracelſus*, and other Chymiſts, as an excellent Emetic, as not only cleanſing the Stomach, by gentle Vomiting, but, alſo, ſtrengthening both Stomach and Inteſtines afterward, by its Aſtringency: Whence it is given with Succeſs in Diarrhœas and Dyſenteries. This *Gilla* was very much in Uſe before antimonial Emetics were known, and the Uſe of Ipecacuanha was diſcovered, but is now almoſt left off. *Geoffroy.*

The Analysis of Vitriol into Spirit, Oil, and Colcothar.

1. Take eight Pounds of the common green Vitriol of *Goſelar*, put it into two earthen Long-necks, each containing four Pounds; cover them with a Tile; ſet them upon an Hearth, and ſurround them with Fire, that the Whole may grow gradually hot: The Vitriol will then begin to fume, and, upon increaſing the Fire, and bringing it nearer, to melt; and, upon making the Fire ſtill ſtronger, to thicken and turn grey: Then ſurround the Long-necks on all Sides ſo with Fire, that the Matter may grow yellow, and begin to appear red

at the Sides of the Veſſels. Now let all cool: The Long-necks will be cracked: Take out the Matter, and beat it to Powder; it will be of a yellow Colour. This is the Calcination of Vitriol, in order for diſtilling the Spirit, and Oil thereof. This Operation ought to precede, otherwiſe the Diſtillation would be tedious, on account of the Fume required to draw over the aqueous Phlegm, or elſe the Receivers would crack, on account of that Phlegm acting hot into them; and the Diſtilling-veſſels, alſo, burſt, as being forced by the melted Matter. Hence the Matter is to be calcined only ſo long as till it ceaſes to melt in the Fire. In this firſt Part of the Operation the eight Pounds of Vitriol are reduced to five.

2. Put theſe five Pounds of calcined Vitriol, firſt bruiſed, into a ſtrong Long-neck. Let the Long-neck be large enough to hold double the Quantity; ſet it in a Furnace; when properly placed in the Furnace, and the Wall is built up, apply an Adapter to the Mouth of the Long-neck, luting it on carefully, with a Mixture of Clay and Lime; wrap a wet Linen Rag about the other End of the Adapter, and apply thereto a very capacious Glaſs Receiver, ſo as exactly to fit, and ſo as the Adapter may not reach above two Inches into it. Let this Receiver reſt horizontally upon a Bench, ſo that the Axis both of the Receiver, the Adapter, and the Long-neck, may lie in the ſame horizontal Plane, leſt otherwiſe the Neck of the Adapter, or the Receiver, ſhould be preſſed upon. Lute the ſecond Juncture in the ſame manner as the firſt, and put Linen Rags about it, ſpread with the ſame Luting; and thus leave the Veſſels for twenty-four Hours, that the Luting may grow dry.

3. Make the Fire with proper Cautions; a white Fume will firſt riſe, and the Receiver grow warm; keep the Fire up in this State for ſix Hours; oily Veins will afterwards run down the Sides of the Receiver; and in this State again continue the Fire for ſix Hours; then for ſix Hours longer keep it up to its utmoſt Height, that the Long-neck may be thoroughly red-hot; a thick Oil will thus come over. If the Vapour ſhould paſs through the Luting, put a Linen Rag, ſpread with the ſame, and well heated upon the Crack; and thus it will be ſtopped. Though the Fire ſhould be ever ſo long continued, the Vapour would not ceaſe to riſe, but the Produce would not defray the Coſt; ſo that I judge eighteen Hours ſufficient. Now, therefore, let all cool, till the Adapter is but juſt warm, and the Receiver grown quite cold.

4. Have then ready at hand a Bottle with a narrow Neck, and fitted with a wide Glaſs funnel; then carefully moiſten the Rags, and the Luting applied to the Mouth of the Receiver, and take them away gently, with Care to prevent the Dirt from falling in, the Fume from coming out ſo as to prove offenſive, and the Glaſs from cracking, by being moved obliquely. Take it therefore away in a ſtrait Line, and avoid the noxious Fumes. Cleanſe the Mouth of the Receiver, that no Luting may drop in; then pour the Liquor out of the Funnel into the Bottle, ſtop it up, and ſet by the Receiver for the like Purpoſes. I have uſually thus obtained one-and-twenty Ounces of thick, black, ſtrong, and ſmoking Oil of Vitriol. A red, blackiſh, light, powdery, auſtere Calx, remains in the Long-neck, to the Quantity of fifty-two Ounces; ſo that five Ounces are loſt in the Operation.

REMARKS.

And thus the Oil or Spirit of Vitriol is prepared, which has numerous Uſes in Chymiſtry and Medicine; for it is a moſt powerful ponderous Acid, and a great Preſervative, though itſelf a Cauſtic; and hence Vitriol conſiſts of this, and Colcothar, and Phlegm. This Oil of Vitriol will ſcarce boil without a Fire of ſix hundred Degrees. If put into a Glaſs Body, and urged with a Sand-heat of five hundred Degrees, it yields its wild ſuffocating Spirit and Water, then changes from black to limpid, and becomes exceeding ponderous and fiery; and if poured into a Glaſs wet with Water, it produces ſuch a Heat as inſtantly to crack the Glaſs: It attracts Water out of the Air. If four Ounces of this Oil be, by a Sand-heat, diſtilled in a little Retort, with a long and very curved Neck, ſo as that one Drop may follow another at the Diſtance of ſix Seconds, and fall into fair Water, contained at the Bottom of the Retort, as pure and perfect an acid Spirit will be thus obtained, as Oil of Sulphur by the Bell: But this requires a ſkilful Operator. Each Drop, when it falls into the Water, makes an Hiſſing, as if Fire had fallen therein: But if a falling Drop touches the Glaſs, it immediately cracks it, as if it were cut with a Diamond.

If a ſtronger Fire be uſed, the Neck of the Retort cracks, the Labour is loſt, and a pernicious ſuffocating Fume exhales, which ought to be cautiouſly avoided. This Proceſs is otherwiſe noble, and of excellent Uſe, at may be learnt from a prudent Exerciſe of Chymiſtry and Medicine. *Paracelſus* deſcribes the beſt Method of preparing this Spirit to be by diſtilling recent Vitriol to Dryneſs, in a Veſſel of *Heſſian* Earth, and cohobating the Liquor upon the Remainder, the oftener the better, at laſt uſing the utmoſt Violence of Fire; and by this means he promiſes a Liquor ſerviceable in many Caſes. The Direction is ingenuous, and Artiſt-like, provided the Veſſel be kept from burſting by too large a Quantity of the dry Vitriol. The Caution is to uſe a little Quantity at once, in a Proportion to the Veſſel. *Boerhaave's Chymiſtry.*

The Maſs that remains after the Diſtillation of Vitriol, called *Colcothar*, is a red martial Earth, ſtill impregnated with ſome Quantity of acid Salt, and by often waſhing and drying, it becomes an Aſtringent; which is uſed externally to ſtop Bleeding in Wounds; and from the Water in which it is waſhed, a Salt is obtained, called the *fixed Salt of Vitriol*, or *Salt of Colcothar*. When the Colcothar has not been much calcined, it remains white and pellucid, not emetic, but diuretic, and aperient. Though this Salt is ſo much fixed as not to riſe by a very great Degree of Heat, continued for ſeveral Days, yet it is eaſily made volatile by means of Borax, and is ſublimated in the Form of ſilver-coloured ſaline Flowers. This is the ſedative Salt of the great *Homberg*, and is thus prepared:

Take the fixed Salt of Vitriol well calcined, and Borax, of each two Ounces: Diſſolve them ſeparately in four Pints of warm Water; and then, having mixed the Solutions, paſs the turbid Liquor through Cap-paper, and then diſtil it in a Glaſs Alembic, to Dryneſs; which being done, white ſaline ſilver-coloured Flowers will be ſublimed. Theſe are to be gathered, and kept for Uſe. The fixed Salt that remains in the Bottom of the Alembic, by a new Affuſion of Water, may be fitted for a new Diſtillation, which being continued to Dryneſs, freſh Flowers will ariſe; and this Operation may be repeated till all the Salt is ſublimed. The ſame Preparation may be obtained by taking Oil of Vitriol inſtead of the fixed Salt, and mixing it with twice its Weight of Borax. In this Caſe there is no Precipitation; but nevertheleſs Flowers are raiſed of the very ſame Kind with the former.

Theſe Flowers are almoſt inſipid to the Taſte, and not eaſily diſſolved in Water. They calm the feveriſh Heat of the Blood, and eſpecially in burning Fevers, they prevent or remove delirious Symptoms, and allay ſpaſmodic Affections, whether hypochondriacal or hyſterical, at leaſt for a time. In a Word, this Salt is an excellent Anodyne, and has a juſt Title to all the Virtues aſcribed by Chymiſts to Vitriol, Sulphur, or what they call the *Archæus Sedator*. The Doſe is from one to ten Grains, in any proper Liquor. It is however unſafe to order this Salt in Inflammations of the Lungs, Spitting of Blood, and other Inflammations of the Thorax; for though it be inſipid ro the Taſte, yet it contains latent *Spicula*, which being gradually diſengaged in the Body, may irritate and vellicate the Membranes of the Lungs, and ſo bring on a Cough.

Vitriol is, alſo, the Baſis of the famous ſympathetic Powder, to make which they calcine *Roman* Vitriol by the Rays of the Sun in the Dog-days, to a white and yellowiſh Powder, and keep that Powder for Uſe in Veſſels cloſe ſtopped. *Digby*, and others, have ſaid wonderful things of this Preparation, which are not confirmed by Experience. However, it certainly ſtops Bleeding, when applied immediately to the open Extremities of the Veſſels; and hence ſome have endeavoured to cure Wounds by the Uſe of it, mixing only a ſmall Quantity of Gum Tragacanth in caſe of a purulent Diſcharge. *Geoffroy.*

THE DULCIFY'D OIL OF VITRIOL.

Ever ſince Chymiſtry began to be cultivated and improved, the Diſtillation of a ſweet Oil from Vitriol has been known. *Baſil Valentine*, and *Paracelſus*, make Mention of it; for as the antient Chymiſts endeavoured, beſides their own Secrets, to find a Subſtance for converting the more ignoble Metals into Gold, ſo they were perſuaded, that the Matter of this Subſtance was to be ſought for in Vitriol; for which Reaſon they have ſubjected this Salt to various Analyſes by Fire, and obtained ſeveral Preparations from it, as may be ſeen in the Writings of the moſt celebrated Chymiſts, who accounted Vitriol the Matter of the true Philoſophers Stone, as is evident from that remarkable Canon of the Chymiſts: *Viſita Interiora Terræ, Rectificando Invenies Occultum Lapidem Verum Metallorum.* Viſit the interior Parts of the Earth, and you will there find the true

ſecret

ſecret Stone of Metals. The initial Letters of the *Latin* Canon expreſs the Name of *Vitriol*, from which various Preparations have been obtained; but none more remarkable than that Proceſs by which Oil of Vitriol is rendered ſweet. This is mentioned by *Valerius Cordus*, from whom *Conradus Geſner* has taken the Proceſs, which in *Euonymus*'s *Theſaurus de Remediis Secretis*, is ordered to be carried on in the following Manner:

Take of the moſt acrid burning Wine thrice ſublimated, five Ounces; and as much of the auſtere Oil of Vitriol: Mix in a *Venetian* Glaſs; put it in a ſmall Cucurbit with a narrow Mouth, and lute up the Orifice cloſe, and let it ſtand thus for a Month or two: Then pour it into a Cucurbit with an annexed Alembic; then put it in a ſmall Furnace, and cover the Half of it with Aſhes; then apply a Receiver, lute the Joinings well, and extract the five Ounces of burning Wine which you have poured in: But that this may be more ſafely done, place the Cucurbit in *Balneo Mariæ*; for thus the Wine will aſcend without the Oil. When you have extracted the Wine, place what remains in a Furnace, ſo that the Sand may reach the Middle of the Cucurbit; then applying another ſmall Receiver, lute the Joining carefully; then apply a moderate Fire, and gradually extract the Moiſture till none appears left at the Bottom, always taking care ſo to regulate the Fire, that the Liquor may not boil up to the Pipe of the Alembic; for if ſuch a Boiling ſhould happen, you cannot check it, nor hinder it from going over into the Receiver, ſo that all the Oil is loſt; for it boils very eaſily. Then you will ſee, that an aqueous and pinguious Humour are contained in it. You muſt ſeparate the one from the other, ſo that nothing aqueous may be left in the Oil; for the Water corrupts the Oil, which, when ſeparated, is to be preſerved for Uſe. It is to be carefully kept, becauſe only a ſmall Quantity of it is obtained from one Pound of the auſtere Oil, and it eaſily evaporates on account of its aereal Quality. It is good againſt all Putrefactions in the Body, and againſt the Plague; it is, alſo, proper for carrying Pus, and thick and viſcid Humours, out of the Lungs, in a Pleuriſy, a Peripneumony, and an uneaſy Cough; for it may be ſafely taken internally, and neither ſuffers the Formation of the Stone in the Kidneys, nor in the Bladder. It, alſo, cures the Bladder when exulcerated. The Doſe is one, two, or three ſmall Drops, in moderately temperate Wine.

Crollius, in *Baſilica Chymica*, orders the ſweet Oil of Vitriol to be prepared thus:

Take of the rectified Oil of Vitriol, one Part; and of Alcohol, four Parts: Digeſt in a Vapour Bath for ſome Months, and afterwards diſtil; and thus you will have floating on the Water an Oil of Vitriol of a grateful Taſte and Smell, and of great Efficacy in Medicine.

Theſe are the two Proceſſes I have found in the Writings of the moſt antient Chymiſts. Now it may juſtly be queſtioned, whether this Proceſs anſwers, ſince I never remember to have met with it in any other Author, eſpecially with this Detail of Circumſtances and Cautions. Hence, it is probable, that the Chymiſts of the ſucceeding Age either did not prepare it, or did not look upon the Proceſs as genuine, tho' in reality it is moſt true.

That deſcribed by *Crollius*, is the true *Spiritus Vitrioli Dulcis*; and, as in this Preparation, he has omitted the principal Circumſtances added by *Geſner*, it is juſtly to be doubted, whether he ever prepared ſuch a ſweet Oil of Vitriol, eſpecially becauſe he informs us, that the Oil floated on the Water; whereas on account of its Weight, it rather ſubſides to the Bottom. *Hartman*, alſo, in his Notes on *Crollius*, doubts with reſpect to this Proceſs, and ſubſtitutes another ſweet Oil of Vitriol in its ſtead; which is prepared thus:

Boil Oil of Vitriol in a new iron Pan with common Water, till the corroſive Salt is collected at the Bottom of the Pan; and then the reſt of the Oil of Vitriol becomes ſweet. The ſame Effect is produced by extinguiſhing red-hot Iron, for ſeveral times, in Oil of Vitriol; but by this means the Virtues of the Oil are greatly changed, and its medicinal Effects loſt.

Every one muſt be ſenſible, that Oil of Vitriol, when mixed with Iron, loſes its corroſive Quality, but degenerates into a vitriolic Liquor, which, in ſome meaſure, ſubſides to the Bottom. But this is not the ſweet Oil of Vitriol which ought to reſemble that of Olive-oil, to be inflammable, of a fragrant Smell, and aromatic Taſte, leaving no Acidity on the Tongue. It ought, alſo, to be diſſolvable in highly rectified Spirit of Wine, and to be poſſeſſed of anodyne and ſedative Virtues. The celebrated Author of the Diſſertation *de Vitrioli Elogiis*, ſpeaks in the following Manner of the *Oleum Vitrioli Dulce*: "*Paracelſus* boaſts, that he is able from Vitriol to obtain a "Spirit, or rather a ſweetiſh Oil of a green Colour, by means "of which, he affirms, he can cure the Epilepſy. The Art "of obtaining this puzzles the moſt expert Chymiſts, ſince, "ſo far as I know or remember, no one has ventured to affirm, "that he was Maſter of ſuch a Secret." But I have obſerved, that two Centuries ago, the Preparation of this Oil was known to *Geſner*, and *Valerius Cordus*, the Truth of which will be more evinced by what follows. When, without any Knowledge of *Geſner*'s Proceſs, I above twenty Years ago had prepared ſome ſweet Spirit of Vitriol, I found this highly fragrant Oil. The Proceſs, as carried on by me, is as follows:

Take one Pound of Oil of Vitriol by Rectification freed from all its Phlegm, and of highly rectify'd Spirit of Wine entirely free from Water, ſix Pounds; to which pour the Oil of Vitriol. This produces a great Heat and Noiſe, reſembling that produced by red-hot Iron immerſed in cold Water. The Mixture becomes warm, and acquires a red Colour, and a grateful Smell; a few Days after, diſtil from a Cucurbit, with the Sand laid pretty high about it. Thus there is firſt obtained a pretty fragrant Spirit of Wine, and afterwards a more fragrant one. If the Mixture begins to be changed into a black Subſtance at the Bottom of the Cucurbit, the Spirit is to be removed, and another ſmall Receiver applied; the Fire in the mean time being very mild and gentle; for unleſs this Caution is obſerved, the Whole of the black Maſs ſuddenly comes over, and all the Labour is loſt. But if we carry on the Proceſs with a gentle Fire, we obtain a Phlegm of a ſulphureous Taſte, together with at leaſt five Drams of an Oil, which ſubſides to the Bottom. This ſulphureous Water is decanted, and we obtain a ſweet ethereal Oil, of a grateful and penetrating Taſte and Smell; and this is to be carefully preſerved in a Phial.

1. That there is an Acid in this ſweet Oil of Vitriol is obvious from this, that if any of it is put in a Silver Spoon, and held over a Candle, it contracts a reddiſh Colour, becomes acid, and tinges the Spoon with a black Colour.

2. If this aromatic Oil is for ſome Months kept in a Glaſs covered with a Swine's Bladder, it ſucceſſively corrodes it, and that which remains in the Phial contracts a red Colour, and an acid Taſte.

3. If it is boiled in a Phial with Quickſilver, it attacks the Quickſilver.

4. This aromatic Oil, when recent, is thoroughly diſſolved by highly rectified Spirit of Wine, to which it communicates its Taſte and Smell, together with an anodyne and ſedative Quality, highly beneficial in all Pains and Spaſms.

5. This Spirit of Wine impregnated with ſweet Oil of Vitriol, if mixed with a ſmall Quantity of the Solution of Gold, makes a yellow Tincture, which, when dropped on Iron, tinges it with the Colour of Gold.

6. When this Solution of Gold ſtands for twelve Hours, a black Powder ſubſides to the Bottom, a Sign that the Sulphur of the Vitriol unites with the Powder of the Gold, and that both of them are precipitated to the Bottom.

This curious and remarkable Proceſs clearly diſcovers the Production of ethereal and diſtilled aromatic Oils. *Glauber* informs us, that highly-rectified Spirit of Wine may be converted into Oil, if it is mixed with Oil of Salt concentrated with *Lapis Calaminaris*. I tried this Experiment, but could obtain no Oil, beſides the ſweet Spirit of Salt; but by the Help of this Experiment I obtained an Oil, from the Production of which we learn, that highly-rectified Spirit of Wine is nothing but an æthereal Oil by the fermentative Motion reſolved into the minuteſt Parts, and intimately mixed with the Phlegm: But when the Oil of Vitriol intimately unites itſelf with the oleous Particles diſjoined in the Spirit of Wine, it is again coagulated into an Oil.

Hence it is obvious, that an Acid may enter the Mixture of diſtilled Oils, and that without a manifeſtly acid Taſte it may be concealed and covered by the Oil and Sulphur: By the Admixture of the acid Sulphur of the Vitriol, hence the whole Oil is ſulphureous, the pinguious and oleous Parts of the Spirit of Wine acquire a new and penetrating Taſte; for which Reaſon the Sulphur of Vitriol, in a liquid Form, may juſtly be accounted an excellent Anodyne, of great Efficacy in the Cure of Diſeaſes, as I have often found from Experience. *Hoffman. Obſ. Phyſ. Chym.*

The fixed Anodyne Sulphur of Vitriol.

We ſhall now conſider that black Maſs, of the preceding Proceſs, which, in Diſtillation, remains at the Bottom: If to

this a ſufficient Quantity of common Water is poured, the Acid is diluted, and the Liquor, aſſuming a browniſh Colour, is, by a due Evaporation, ſo concentrated, as again to yield true Oil of Vitriol; with which, and the Addition of the highly-rectified Spirit, we may again attempt the Preparation of the Spirit and ſweet Oil of Vitriol. All the Acidity being waſhed away by the common Water, there remains, in the Filtre, a ſubtile Powder, of a blackiſh Colour, and which, when dried, and thrown upon live Coals, flies all off with a ſulphureous but not a fetid Smell. If this Powder is put into a Crucible, and urged by a ſtrong Fire, it becomes red-hot, and a conſiderable Part of it is diſſipated in the Air.

Upon laying this Powder, *ſtratum ſuper ſtratum*, with Plates of Silver, theſe were not diſſolved, as they generally are by mineral Sulphur; then I put two Drams of Salt of Tartar into the Crucible, in order to melt the Silver; after the Addition of a Dram and an half, I obtained an alcaline Maſs, of a reddiſh Colour, like that Liver of Sulphur which is obtained from a like Treatment of Salt of Tartar, the *Arcanum Duplicatum*, and Powder of Charcoal.

Hence we may conclude, that it is a fixed Earth; and we are carefully to examine whether its Origin is to be derived from the Oil of Vitriol, or from the oleous and ſulphureous Part of the Spirit of Wine; whether there is a peculiar medicinal, ſedative, and anodyne Quality in it; and whether there is not, perhaps, an anodyne Sulphur of Vitriol in it.

It is a common Opinion, that, in the Diſtillation of Vitriol with an Acid, by means of the rapid Motion of the Fire, ſome ſubtile, chalybeate, or coppery Parts, are elevated, and aſcend: For this Reaſon, the Antients, and eſpecially *Baſil Valentine*, preferred red Oil of Vitriol to that which is white, becauſe they thought the former contained Sulphur of *Mars* and Copper, on which its Colour depended. But that this is falſe, is demonſtrated, partly by the Rectification of the Oil of Vitriol, in which it becomes limpid like Water, without any Remainder of coloured Particles; and partly by the momentaneous Converſion of white Oil of Vitriol into red, by the Addition of a ſmall Quantity of Oil, any inflammable Subſtance, or of a Piece of Paper.

Many eſteem the Earth, left after the Diſtillation of the highly-rectified Spirit of Wine, and the Oil of Vitriol, a metallic chalybeate Earth: But I tried an Experiment upon it with a large Burning-glaſs, upon which, it was immediately evaporated into the Air; nor was there any fiery Ebullition like that which always happens in the Fuſion of Iron by means of ſolar Fire; nor did Spirit of *Sal Ammoniac*, when poured to it, extract any Copper, as was evident from the want of a bluiſh Colour, which, by an Admixture of an urinous Spirit, always diſcovers itſelf in Copper.

I am, therefore, of Opinion, that this highly-black and light Earth remaining in the Cucurbit after the Diſtillation of ſweet Oil of Vitriol, and edulcorated by Water, is the phlogiſtic Part of the highly-rectified Spirit of Wine, and of the Vitriol: And that it is ſo, may, I think, be demonſtrated, in the following manner: All Oils even of the moſt ſubtil and æthereal kind, when kindled exhale a black Smoak, which, when collected, conſtitutes a black combuſtible Powder; now it is equally certain, that all inflammable Spirits are only ſubtil Oils by a fermentative Motion united with Phlegm: But as diſtilled Oils, when mixed with Oil of Vitriol, firſt become red, and then, after Diſtillation, and Evaporation, leave a large Quantity of phlogiſtic Earth; ſo it is not to be wondered at, if an inflammable Spirit, in the ſame manner mixed with Oil of Vitriol, ſhould, by its intimate Union with it, not only contract a red Colour, but, alſo, leave a large Quantity of combuſtible Earth, and diffuſe a Smell like that of Sulphur; for that fetid Smell, diffuſed by its Smoak, when kindled, ariſes from acid Particles mixed with a ſulphureous Earth.

In this Experiment it is obſervable, that the thick and black Matter, ſwelling like kindled Sulphur, and the Phlegm of an acid Taſte, do not appear till the Diſtillation is almoſt over, the ſuperfluous inflammable Spirit conſumed, and the earthy Particles of the Spirit of Wine, and Oil of Vitriol left: Theſe volatile and oleous Particles, being mixed with acid fixed Particles, ought, alſo, to be ſeparated by a gentle Fire; for by a ſtrong Fire, they will quickly elevate, and raiſe all that ponderous Maſs, ſo that it ſhall come over a long Cucurbit, and the Alembic. Hence we learn, that a ſmall Quantity of volatile Matter is, on the Approach of Heat, capable of raiſing a great deal of the fixed Subſtance with which it is mixed. *Fr. Hoffman. Obſ. Phyſ. Chym.*

VITRUM. Glaſs. *Vitrum Antimonii* is Glaſs of Antimony. *Vitrum Saturni*, is Glaſs of Lead.

VITTA. That Part of the Secundines with which the Head of a Child, when born, is ſometimes covered as with a Coif, is called *Vitta* in a Female; but *Galea* in a Male.

VITULUS. The Calf. For an Account of the alimentary Subſtance contained in Veal, ſee the Article ALIMENTA.

Veal, I mean the Fleſh of all the Parts of a Calf, is much uſed in Food, and ought to be white, juicy, tender, plump, and well-taſted.

The Head and Lungs of a Calf are pectoral, good to qualify the ſharp Humours of the Breaſt and Throat, and for the Phthiſic. Calves Feet are, alſo, pectoral, their Subſtance is glutinous, qualifying, and moiſtening. They are boiled in Broths to moderate the Loſs of Blood, in the Menſes, Piles, and Spitting of Blood.

Veal, and the other Parts of a Calf being endued with a Juice that is temperate, produces no ill Effects; but they are not good for thoſe who have a Looſeneſs, cauſed by the Relaxation of the Fibres; for they will increaſe this Diſorder.

Veal contains much Oil, Phlegm, and volatile Salt.

It agrees at all times, with any Age or Conſtitution; but it is better for weak and tender People, and ſuch as live a ſedentary Life, than for thoſe that are ſtrong, robuſt, and accuſtomed to conſtant Exerciſe, who require more ſolid Food, and that does not ſo ſoon conſume as Veal.

REMARKS.

A Calf ought to be choſe when very young, and while it ſucks, becauſe then its Fleſh and other Parts, are tender, dainty, and eaſy of Digeſtion; whereas theſe ſame Parts will afterwards become dryer, harder, and conſequently, not ſo eaſy of Digeſtion. *Bruyerinus* ſays, the *Romans* and *Italians* let their Calves ſuck ſix Months, and ſometimes even a whole Year; and that during that Time, they took care they ſhould eat no Graſs, as being perſuaded their Fleſh would thereby be more dainty, healthy, and better taſted: In ſhort, as theſe Animals are naturally of a dry Conſtitution, the younger they are, the more good Effects their Fleſh ſhould produce, becauſe it is in a better Temper.

Avicenna pretends Veal is very wholſome, and that it produce good Juices. Laſtly, *Galen* ſays, that roaſted Veal is eaſy of Digeſtion, and very nouriſhing.

Veal is nouriſhing, cooling, and moiſtening, becauſe it contains an oily, viſcous, and balſamic Juice, that is fit to unite with the ſolid Parts, to embarraſs the ſharp Humours, and to moderate their Fury and Impetuoſity. It looſens the Body, by making the Humours contained in the Veſſels more fluid, and the Paſſages more free and open. As for a Calf's Liver, as it conſiſts of a compact and earthy Subſtance, as well as thoſe of other Animals, it is not ſtrange it ſhould make the Humours groſs, and bind the Body. They make uſe of the Fat or Suet of Veal, and eſpecially that about the Kidneys, in Pomatums: This, as well as the Marrow of the Animal, is of a diſſolving Nature.

The Runnet, which is made uſe of to curdle Milk, is in *Latin* called COAGULUM; which ſee. *Lemery on Foods.*

It is very remarkable that Veal, however eaſy of Digeſtion it is generally eſteemed, will not agree with ſome Stomachs, but excites a kind of Sickneſs and Uneaſineſs, for many Hours after; a certain Evidence that it does not duly digeſt; and theſe are generally the Stomachs, which digeſt other Animal Food without any Uneaſineſs.

VIVERRA. Offic. Charlt. Exer. 20. *Viverra, Ictis, Furo.* Mer. Pin. 167. *Muſtela ſylveſtris.* Geſn. de Quad. Digit. 762. Aldrov. de Quad. Digit. 327. Johnſ. de Quad. 107. *Muſtela ſylveſtris Viverra dicta.* Raii Synop. A. 198. THE FERRET.

The Fleſh, and Gall of this Animal, are recommended in an Epilepſy, the Gout, and are ſaid to be good againſt Poiſons. *Dale. Lemery.*

VIVIPARUS. An Epithet for thoſe Animals which bring forth a young Animal, by way of Diſtinction from thoſe which produce Eggs, and are called Oviparous.

ULCUS. An Ulcer.

What is meant by an *Ulcer*, ſeems ſo well known to every Perſon as to require no prolix Deſcription; for the Definitions which are uſually given us, both of this and many other things, are generally more obſcure and difficult to be underſtood than the Names themſelves. The moſt clear, however, and diſtinct Notion given of an *Ulcer* is, by thoſe who define it *a Solution of the ſoft Parts of our Bodies together with the Skin, produced by ſome internal Cauſe*, as an Inflammation, Abſceſs, or acrimonious Humours. But Wounds which become inveterate and even Contuſions when difficult of Cure, come within this Definition, and paſs at length into *Ulcers*, and are commonly ſo called.

The proper and uſual Seat of an *Ulcer*, then, is in any of the ſolider Parts of our Body, as the Skin, Fat, Glands, Fleſh, and

and internal Viſcera: For if there be any Exulceration or Corroſion in the harder Parts, as the Bones, it comes rather under the Notion of a Caries, or what is commonly called *Spina Ventoſa*, than that of an *Ulcer*; though on account of ſome kind of Reſemblance which it has with an Ulcer or Eroſion of the ſofter Parts, they are ſometimes treated of in Conjunction.

How *Abſceſſes*, *Contuſions*, and *Wounds* differ from *Ulcers*, will be ſufficiently illuſtrated by an attentive Conſideration of the Nature of each Diſeaſe: For though *Wounds* and *Contuſions*, as well as *Ulcers*, conſiſt in a Diſſolution of the ſoft Parts, yet they differ from them in a very material Point, as they proceed from an external Cauſe, and are produced, as it were, in a Moment; whereas *Ulcers*, on the contrary, owe their Original chiefly to ſome internal Cauſe, and form themſelves by Degrees. As for *Abſceſſes* they are, as it were, the firſt Principles of *Ulcers*, or *Ulcers* not yet arrived at Maturity, as when an Inflammation paſſes into a Suppuration, the Skin remaining as yet entire. But as ſoon as the Skin breaks, and there is an Effuſion of mature Pus, the *Abſceſs* is ſuppoſed to paſs into an *Ulcer*, whether the Rupture happens ſpontaneouſly from an Eroſion by the Pus, or the Skin be opened by the Surgeon's Knife.

Ulcers can by no means be reckoned all of one Kind, but are diſtinguiſhed into various Species on many Accounts; as (1.) with reſpect to the different Parts of the Body in which they are ſeated; for ſometimes they inſeſt the Skin, at other times the Fat, and ſometimes the Glands and Fleſh; (2.) as to their Magnitude; for ſome *Ulcers* are large and extended; others ſmall and contracted within narrow Limits; ſome deep, others ſhallow and more ſuperficial; in particular, *Ulcers* of a conſiderable Depth, but narrow, and more eſpecially diſtinguiſhed by the Narrowneſs of their Orifice, or Beginning, uſually paſs under the peculiar Denomination of *Sinus*, or *Fiſtula*. *Ulcers* differ, (3.) with regard to *Duration*; for ſome are *recent*, others *inveterate*; (4.) on account of their *attendant Symptoms*; in which reſpect ſome *Ulcers* are *mild* and *favourable*, others *malignant*, that is, *attended with very acute Pains*, or *fetid*, *putrid*, *pinguious*, *rheumy*, or *diſcharging much Ichor*, *creeping*, or *ſpreading*, *cancerous*, or *inclining to a Cancer*, *callous*, *fiſtulous*, or *verminous*; there is a Difference between them, (5.) with reſpect to their Cauſes, in which Light they aſſume the Epithets of *ſcorbutic*, *venereal*, *carious*, *cancerous*, *peſtilential*, and ſuch as are ſuppoſed to proceed from *Faſcination*. In the laſt place *Ulcers* are diſtinguiſhed (6.) by the Parts in which they are ſeated. Thus ſome infeſt the *Noſtrils*, others the *Fauces*, *Palate*, *Breaſt*, and *Anus*; and one Sort has the Name of *Fiſtula Lacrymalis*.

The Opinion of ſome late Phyſicians, who aſcribe the *principal Cauſe* of *Ulcers* to ſome foreign *Acid*, corroding the Parts of the Body like Aqua-fortis, ſeems too precarious and ill-founded to demand our Aſſent, ſince there is hardly any Kind of *acrid Humour*, whether it be ſaline, lixivial, alcaline, or acid, that is not capable of corroding the Body, and exciting an *Ulcer*. And indeed, as the Blood in Stagnation is generally converted into an alcaline Acrimony, which has nothing at all of the Acid in it, as ſome would perſuade us, ſince the very fetid Smell of Ulcers ſhews the Alcali to have by much the Predominance, I think it appears very plainly that the *Cauſe* of Ulcers is oftener to be aſcribed to alcaline than acid Humours, as we know and take it for granted, that by *Alcali* our Phyſicians mean any Kind of acrimonious or ſalſuginous Subſtance, which reſiſts and enters into Conflict with all Kinds of Acids; as, for Inſtance, Salt of Tartar with Vinegar, and Oil of Tartar *per Deliquium* with Spirit of Vitriol. But to proceed. As there is a great Variety of Poiſons, ſo is there, alſo, of acrimonious Subſtances, and conſequently of *Ulcers*. The more peſtilential the corroding Acrimony, the more noiſome and fetid, the more phagedenic and dangerous are the *Ulcers*, and ſometimes to ſuch a Degree of Malignity as to become quite incurable, as in a Carcinoma, or Cancer. It is to be obſerved, alſo, that *Ulcers* may owe their Original not only to Acrimony, but to any Cauſe whatever, which is capable of effecting a Stagnation and Corruption of the Blood. Thus *Tumors*, *Inflammations*, *Wounds*, *Contuſions*, *Fractures*, *Luxations*, *Scirrhuſes*, *Cancers*, and *Caries*, very frequently degenerate into *Ulcers*, which, alſo, tho' they may happen at firſt to be mild and ſafe, often become at length malignant and dangerous, either from a bad Habit of Body, an improper Regimen of Diet, or unſkilful Treatment and Bandage, and other like Cauſes.

Tho' moſt Kinds of *Ulcers* may be diſcovered and known by the bare Sight, yet that we may examine more exactly the Depth of a Sinus, and which Way it proceeds and has its Courſe, and whether it be attended with a Caries, we uſe the Help of Probes. Whether it be a new or an old Ulcer is beſt known by interrogating the Patient, who will, alſo, probably make the beſt Diſcovery of the Cauſes why the Diſeaſe is become inveterate, and whether it be owing to ſome ſubjacent Caries, or to an improper Regimen of Diet, or Method of Cure. An *Ulcer* is to be judged mild and favourable principally on the following Account; if, in the firſt place, it be not inveterate, nor accompanied with any bad Symptoms; if again the Pus be moderately thick, whitiſh, ſmooth, and not very fetid; and, laſtly, if the Patient be young and vigorous. On the contrary, *Ulcers* are juſtly eſteemed malignant and difficult of Cure, if the Patient be of an infirm, ſcorbutic, or hydropic Habit of Body; if the Pus be immoderately thin, acrid, fetid, yellow, whitiſh and reddiſh, greeniſh or blackiſh, or too thick, and much reſembling Lard. No leſs Danger is to be apprehended, when the Patient labours under intenſe Pains, or the *Ulcer* is of ſuch a Nature as to reject the Method of Cure uſed in Wounds, and recent Abſceſſes, by Digeſtives, and vulnerary Balſams.

Impure and *putrid Ulcers* are ſo called, when the affected Fleſh appears corrupted, ſoft, whitiſh, or livid; or when the Matter diſcharged is thicker, and more glutinous than ordinary, or appears green, or variegated. *Ulcers* of the *fluent* or *rheumatic* Kind are ſuch as diſcharge Plenty of thin Sanies. *Phagedenic*, or *ſpreading Ulcers*, diſcover themſelves by corroding the circumjacent Parts, in a quicker or ſlower manner, according to the Degree of Acrimony in the Matter. We call an *Ulcer fiſtulous*, when it penetrates to a conſiderable Depth under the Skin, or between the Muſcles, and eſpecially when the Sinus is large, and the Outlet, or Orifice, narrow. And, laſtly, *Ulcers* are ſaid to be *callous*, when their interior Parts are covered with a Kind of hard, and, as it were, cartilaginous Subſtance.

Ulcers are judged to be *venereal*, when conſequent upon lying with an infected Woman, or after ſome venereal Diſorder, as a Gonorrhœa, venereal Bubo, or the Lues Venerea. Various is the Situation of theſe Kinds of *Ulcers*, tho', for the Generality, they are ſeated in the ſame Places in which venereal Bubos are produced; or in the Noſe, Fauces, and Penis; which laſt are called *Ulcers*, or *Carcinomas* of the Penis, in *French Chancres*, "Shankers." In the other Sex theſe venereal *Ulcers* are moſt incident to the *Labia Pudendi*, and the Neck of the *Uterus*. *Cancerous Ulcers* are either the very ſame with thoſe exulcerated *Carcinomas* treated of under CARCINOMA, [ſee that Article] or ſuch as, in their Progreſs, and attendant Pains, moſt nearly reſemble a *Carcinoma*. *Ulcers* are ſaid to be *carious*, when ſome adjacent Bone is found deprived of the Periofteum, and corroded, or affected with a *Caries*. That *Ulcers* may be produced by *Faſcination*, or Witchcraft, the common Proof is, that Pins, Hair, Threads, Rags, Nails, Egg-ſhells, Coals, and other extraordinary and preternatural Things, are ſometimes found, in Wounds, or Abſceſſes, But, if I may be allowed to ſpeak my own Sentiments, in this Affair, I am of Opinion, that not only moſt of thoſe Signs which are regarded by the Ignorant as undoubted Marks of Faſcination, but the very Thing, or Faſcination itſelf, is, at leaſt, very much to be queſtioned, or elſe is abſolutely counterfeit, and wholly directed and promoted with a ſuperſtitious View: For many *Ulcers* were, in former Times, eſteemed the Effects of *Faſcination*, when, in Reality, they were manifeſtly otherwiſe.

Recent Ulcers, of a favourable Kind, like recent Abſceſſes, are not difficult of Cure, eſpecially if the Patient be young and vigorous; but the more inveterate an *Ulcer* becomes, and the worſe the concomitant Symptoms are, the greater is the Difficulty which attends a due Conglutination; whence it is, that very *putrid*, *rheumatic*, or *much-running*, *fiſtulous*, *callous*, *carious*, and *cancerous Ulcers*, are not cured but with vaſt Difficulty, and by the utmoſt Skill and Management of the moſt able Surgeons. For as for thoſe bold and confident Quacks and Mountebanks, who boaſt and value themſelves at ſo high a Rate, on account of their ſecret Plaiſters and Ointments, which they pretend to be of ſurpriſing Efficacy in all manner of *Ulcers*, I am perſuaded, and can appeal to Experience, that they very groſly impoſe upon themſelves, and others. The more depraved or infirm the Habit of Body, the older the Patient, the more acrimonious the Blood, the worſe the Smell of the *Ulcer*, and the Colour and Acrimony of the Pus, the more difficult muſt, of Neceſſity, be the Cure. When the *Ulcers* are very large, or numerous, and every Day diſcharge a vaſt Plenty of Matter, or Sanies, they very much weaken, and, by Degrees, exhauſt and deſtroy the Patient. Old *Ulcers* in the Feet, eſpecially in Perſons far advanced in Years, and infirm, are by no means to be healed: For, as Experience almoſt univerſally ſhews, the Health of the Patient ſtands eſtabliſhed on a good and hopeful Foundation, as long as the corrupted Matter, collected from all Parts of the Body, is diſcharged by the *Ulcers*; but when this Efflux is ſuppreſſed by a Conglutination, the Conſequence, after ſome time, is generally obſerved to be ſome very bad Diſtemper, ſuch as Pains of the Head, Vertigo, Apoplexy, Epilepſy, a Difficulty of Breathing, or a Suffocation, or, perhaps,

a Diarrhœa, Dyſentery, internal Inflammations, and other Diſorders of that Kind, which terminate in Death, according to the concurrent Obſervations of very many practical Phyſicians. Thus, alſo, when any inveterate *Ulcers*, of this Kind, dry up in old Perſons, and their Lips contract a Lividneſs, with a Heat, there is great Danger of a *Sphacelus*, ſucceeded by Death. But in younger, and robuſt Perſons, the Cure of inveterate *Ulcers* is attended with more Safety; but the neceſſary Care to be taken in ſuch Caſes is, not only to remove the Cauſe of the *Ulcer*, by proper Medicines, but to reſtore the Blood to its former Purity; which, oftentimes, is not effected but with great Difficulty. If the Diſeaſe, therefore, be too inveterate, and the affected Perſons impatient of Medicines and Abſtinence, it is no wonder if *Ulcers* cannot be cured, even in robuſt Conſtitutions.

Venereal Ulcers are ſeldom or never to be cured without a previous Expulſion of the venereal Venom out of the Body by proper Medicines; without which, all external Remedies are of no Effect, in this Caſe. *Fiſtulous*, *callous*, and *carious Ulcers*, are ſeldom or, rather, never cured but by manual Operation; for oftentimes after inducing a Cicatrix, they form themſelves anew, and are more troubleſome than before: In particular, a *carious Ulcer*, if the Caries be great, and eſpecially in the Joints, often diſcharges ſuch vaſt Quantities of Pus, as extremely to weaken, and, without a ſeaſonable Amputation of the Limb, to deſtroy the Patient. The Caſe is much the ſame with *cancerous Ulcers*; for here, alſo, unleſs the Part affected be ſeparated from the Body, there can be no Hopes of a Cure, as we have before obſerved under CARCINOMA; and ſometimes the *Cancer* or *Carcinoma* returns after the Operation, and is not to be removed till it terminates in the Deſtruction of the Patient. As for *Ulcers* affecting the Viſcera, ſince they are removed from the Reach of manual Operation, or the convenient Application of Medicines, they are often very juſtly eſteemed incurable.

The Method of Cure in *Ulcers* is extremely various, as adapted to the great Variety of the Diſeaſe: For when the *Ulcer* is but recent, it is to be healed in the ſame manner as a recent Wound, or Abſceſs. We muſt firſt, then, begin with *Mundification*, or cleanſing the *Ulcer*; after that, proceed to incarne, or fill the Cavity with new Fleſh; and, laſtly, cover and conglutinate the ſame, as much as poſſible, with a fair and even Cicatrix.

Mundification of an *Ulcer* is uſually performed in the following manner: Firſt, The corrupted Matter is evacuated; or, when it diſcharges itſelf not ſo freely as it ought, gently expreſſed with the Fingers; if there be a deep *Sinus* belonging to the *Ulcer*, it is to be exterged, by ſome proper Injections; or, if the Place be open enough, by repeated Intromiſſions of freſh Lint. If there be any Pieces of Membranes, or other corrupted, pinguious Parts left in the *Ulcer*, the beſt way to eject them is, at every Dreſſing to introduce into the Place Lint moiſtened with ſome digeſtive Ointment, and cover it with a Plaiſter of Diachylon, Diapalma, or ſomething of the like Nature; and upon that apply Compreſſes, and over the Whole a Bandage: This Method is to be carefully followed till the Place be thoroughly cleanſed, or till the Bottom of the *Ulcer* appears quite red, and covered with new Fleſh.

After due *Mundification*, our next Buſineſs is, to fill the *Ulcer* with new Fleſh, which is performed by Help of ſuch Medicines as are commonly called *Sarcotics*, [from σάρξ, Fleſh] that is, Fleſh-generaters; among which, the beſt, and moſt effectual by many Degrees, is the *Digeſtive Ointment*; for without ſome extraordinary Impediment, this *Digeſtive* is of itſelf ſufficient to produce new Fleſh. It is, indeed, the Manner of almoſt all Surgeons, very gravely to recommend every one his proper Balſamics for the procuring of new Fleſh; but there was no Neceſſity, as I imagine, for them to be ſo careful and ſolicitous on this Point, ſince there is in this very *Digeſtive*, a balſamic Virtue; and we ought, beſides, to conſider that this new Fleſh owes its Generation not ſo much to the Aſſiſtance of Medicines, as the Benefit of Nature: For all the Care and Diligence of the Surgeon have ſcarce any other Effect than to remove all ſuch Things as are hurtful, and may prove Impediments to a Cure. If any one, however, ſhould think our *Digeſtive Ointment* not ſtrong enough for his Purpoſe, I would adviſe him to *Balſam of Arcæus*, *Balſam of Peru*, *Balſam of Mecca*, *Balſam of Sulphur*, *Eſſence of Myrrh and Aloes*, *Oil of Myrrh* per Deliquium, *Oil of Eggs*, and other vulnerary Balſams of the like Kind, to be uſed in its ſtead; and, by the beſt Means he can procure, to accompliſh a perfect Conglutination.

Where an *Ulcer* has penetrated ſo deep as to have its Bottom remote not only from Sight, but from the Reach of Medicines, it may ſeem neceſſary, in every Dreſſing, after expreſſing the corrupted Matter collected within, to make an Injection of ſome cleanſing and healing Liquor; ſuch as a Decoction of Agrimony, or Birthwort mixed with Honey of Roſes, or Eſſence of Myrrh and Aloes, or what *Belloſte*, in his *Hoſpital Surgeon*, recommends, a Decoction of Walnut-leaves, mixed with Sugar, before the Place be bound up, till the Bottom is conglutinated; and to continue the ſame till the *Ulcer* is filled up.

The *Ulcer* being, by ſome means or other, as may ſeem moſt adviſeable, incarned, and filled up, the Induction of a fit and decent Cicatrix is, in the laſt Place, to be conſidered; and there is no better Method to be taken, for this Purpoſe, than every Day to apply dry Lint to the Place, with a Plaiſter, till the Cicatrix be completed: But if, by ſuch means, you cannot prevent a Luxuriancy of Fleſh, with a Moiſtneſs of the *Ulcer*, it will be proper to ſprinkle on the Part ſome drying Powders, ſuch as thoſe of Maſtic, Frankincenſe, Sarcocolla, Colophony, Lapis Calaminaris, and Tutty; applying afterwards, to the Place, dry Lint, and a Plaiſter accommodated to retain and hold together the Things applied, continuing the ſame till the Place be perfectly whole and ſound: But if the luxuriant and fungous Fleſh has already elevated itſelf above the reſt of the Skin, the beſt way to conſume it is, to rub it with blue Vitriol; or, if this be not ſtrong enough, to ſprinkle on it ſome Powder of red Precipitate, and burnt Alum, till its Growth be entirely ſuppreſſed, and nothing appears prominent.

In the laſt Place, it is hardly to be expreſſed how much a prudent Regimen in Diet and manner of Living, contributes towards the Incarning and Conglutination of *Ulcers*: For it has been an old Obſervation of the Profeſſors of the ſalutary Art, that very bad *Ulcers* have often been cured by means of a Regimen, without any conſiderable Aſſiſtance from Medicines; and, on the contrary, that the ſlighteſt, and moſt contemptible, Sores have, by a Neglect of the Rules of Diet, and a prepoſterous way of Living, degenerated into very bad, and even incurable *Ulcers*. Great Care, therefore, is to be taken, by every Perſon infeſted with an *Ulcer*, to avoid acrid, ſalt, and acid Food, and ſuch as is too fat, or heating, with Swine's Fleſh, and all ſuch as is difficult of Concoction. If a bad Habit of Body be an Impediment to the Cure of an *Ulcer*, the Advice of a ſkilful Phyſician is required, who, by the Preſcription of proper internal Medicines, may not only prevent an *Ulcer* of a mild and favourable Kind from becoming malignant, and, perhaps, incurable, but, as much as poſſible, promote and haſten its Cure.

For *fiſtulous Ulcers*, ſee the Article FISTULA.

Of Malignant Ulcers.

There are *Ulcers* of ſo bad and malignant a Nature, as not to admit of a Cure by the common Method of Treatment of *Ulcers* of an ordinary Kind; and theſe are, for that Reaſon, called, in medicinal Terms, *dyſepulotic*, *chironian*, *cacoethea*, [ſee DYSEPULOTOS, CHIRONIUM, CACOETHES] *obſtinate*, and *ſtubborn Ulcers*. It is not to be doubted but that there are ſome proper Cauſes of their Malignity; but what they are in particular, in every Caſe, which render a Cure ſo difficult, is alike known to the Generality of Surgeons, and thoſe who are quite ignorant of the Matter. *Ulcers*, however, of a *ſtubborn* and *malignant* Nature, generally infeſt Perſons of a bad, ſcorbutic, cachectic, and hydropic Habit: They may, alſo, proceed from the *Lues Venerea*, a Caries, or a Callus, an extraordinary Acrimony of the Blood, or a cancerous Diſpoſition; and theſe Cauſes are diligently to be inveſtigated, and extirpated, by thoſe who attempt the Cure of thoſe Kinds of *Ulcers*, if they would hope for any Succeſs. But an Attempt of this Nature is a Matter of ſuch Difficulty and Importance, as, in moſt Caſes, to require the matureſt Thoughts and Deliberations of the moſt experienced Phyſician or Surgeon; ſo much is it above the Capacity of a mere Empiric, how impudently ſoever he may boaſt of his incomparable Secrets, and ſovereign Remedies of Plaiſters and Ointments, which he has always in Readineſs by him againſt the worſt of *Ulcers*.

If there be nothing of a Fiſtula, Callus, Caries, putrid Fleſh, or Worms, belonging to the *Ulcer*, its Stubbornneſs and Malignancy muſt certainly proceed from a bad and infirm Habit of Body, on account of a too glutinous, acid, acrimonious, or bilious Blood; or from an imprudent Regimen of Diet, or ſome venereal Diſorder; or in Women, particularly, from an Obſtruction of the Menſes; in Men, from a Suppreſſion of the Hæmorrhoids: In ſuch Caſes, it is not only the Buſineſs of a Phyſician to preſcribe internal Remedies, but injoin, alſo, a ſtrict Diet; which is of ſuch extraordinary Efficacy, that even the worſt of *Ulcers* have been frequently cured by it, with hardly any Aſſiſtance from internal Remedies, provided they are every Day duly cleanſed, and dreſſed with ſome common vulnerary Ointment, Oil, or Balſam, with ſome ordinary Plaiſter, as the Lead Plaiſter, or Diapompholygos, or the like, carefully laid over it ſo as to cover the Whole. In Meats and Drinks

Drinks it muſt be obſerved, as an inviolable Rule, to chuſe none but the lighteſt Kinds, and to be very abſtemious even in the Uſe of theſe: But any thing too ſalt, acrid, acid, hard, or crude, or whatever is prepared of Fat, Bacon, Swine's Fleſh, and farinaceous Maſſes, or whatever is taken in Quantities beyond the Rules of ſtrict Temperance, is always found to be extremely prejudicial. Patients of a hot Temperament are to avoid heating Meats; thoſe of a cold Temperament are to abſtain from Foods of a refrigerating Quality; but a good Diet, or Abſtinence, is, however, obſerved to be more effectual, when aſſiſted with due external Treatment. The *Ulcer* muſt, therefore, be very carefully exterged and cleanſed from the corrupted Matter, leſt the ſame, by its Stay, ſhould become more acrimonious, and, by that means, the *Ulcer* ſhould ſpread. After Mundification, you may apply the digeſtive Ointment, with which may be mixed Myrrh, Maſtic, or Colophony, or a Decoction of Walnut-leaves, with a little Sugar, or a Decoction of Verdegriſe in Wine. In ſome Patients, ſimple Spirit of Wine, or Lime-water, applied in Linen moiſtened with them, is of excellent Service in drying and healing thoſe Kinds of *Ulcers*: If there be any Fiſtulas in the Caſe, they are to be cut, then cleanſed, and afterwards conſolidated with Balſam of *Peru*, Balſam of *Capivi*, Balſam of Sulphur, with Oil of Turpentine, or any other agglutinating Medicines; and if, at the ſame time, there be no Neglect of internal Medicines, there is no doubt but ſome of the worſt of *Ulcers* may, by ſuch Management, be brought at laſt to a perfect Cure.

If there be a copious Diſcharge of Humours from theſe ſtubborn Kinds of *Ulcers*, it is an Indication of a Mixture of too great a Quantity of thin and acrid Serum with the Blood, which is often owing to the Patient's drinking too much; and ſuch *Ulcers* are called *Rheumatic*. In this Caſe, ſince there can be no Way more commodious for the Diſcharge of the Humours than by the principal Paſſages downwards, Cathartics and Diuretics, if the Strength will permit, are freely to be adminiſtered; and, at the ſame time, the Patient is to drink leſs. Excellent Medicines, for theſe Purpoſes, are, prepared Millepedes, Eſſence of Amber, of Myrrh, of *Peruvian* Balſam, Tincture of Tartar, tartariſed Tincture of Antimony, or any other Kinds of balſamic Tinctures, or Eſſences, proper for provoking of Urine. Drinking too freely, or in great Quantities, which is often the Cauſe of ſuch Diſorders, is quite improper here; on the contrary, the moderate Uſe of ſtrong Beer, and old Wine, as ordinary Drink, is very wholſome, and the more ſo if a little *Hungarian* or *Spaniſh* Wine be taken now-and-then at Dinner; except at Dinner, I would adviſe Abſtinence from all manner of Drink. Of Meats, or Eatables, the moſt proper are ſuch as are dried or roaſted, or ſuch as thicken the Blood; for which Purpoſe, Barley and Rice-puddings, Water-gruel, Calves Feet, and Jellies, are accommodated. External Medicines, alſo, of a drying Quality, are of principal and neceſſary Uſe; among which are, Lime-water, Lapis Calaminaris, prepared Tutty, Chalk, Maſtic, Frankincenſe, Colophony, and native Cinnabar prepared; with one or other of which the *Ulcer* is to be ſprinkled, and afterwards covered with the Plaiſter Diapompholygos, the lead Plaiſter, or a Plaiſter of Lapis Calaminaris.

That Sort of malignant *Ulcer*, which ſpreads and extends itſelf gradually, by corroding the adjacent Parts on every Side, has the Epithet of *corroſive*, or *phagedenic*, and indicates the State of the Blood to be highly acrimonious. The firſt Care of the Phyſician, therefore, in this Caſe is, by internal, lenient, and emollient Medicines, to correct the ill State of the Blood: To this End are eſpecially adapted Decoctions of the Roots of China, Sarſaparilla, Comfry, Polypody, Liquorice, Scorzonera, the Lapathum Acutum, the Herbs Mallows, Marſhmallows, St. John's-wort, Sanicle, Agrimony, white Horehound, and the like. Of Foods, the moſt proper are, ſuch as were preſcribed before for *rheumatic Ulcers*; for every thing acrid, ſalt, or too much ſeaſoned with Spices or Acids, and all Meats prepared with any Part belonging to a Swine, is highly prejudicial, and therefore to be avoided. On the other hand, purging Medicines now-and-then adminiſtered with a Mixture of *Mercurius Dulcis*, are not only ſerviceable in diminiſhing the Sanies of the Blood, but of great Efficacy as Lenients, in correcting the Acrimony of the Blood, and promoting the Cure. Topical Remedies may be ſuch as were recommended before, and the Uſe of them, after a careful and thorough Exterſion or Mundification of the *Ulcer*, is to be continued till its Progreſs be entirely checked, and the Place perfectly healed.

Somewhat of the Nature of phagedenic or corroſive *Ulcers* are *cutaneous Ulcers*, or ſuch as ariſe in the Skin, and moſt commonly in the Face, as well of Children, as adult Perſons; for they not only owe their Origin to an acrimonious Blood, but dilate and ſpread themſelves. In cutaneous, therefore, as well as phagedenic *Ulcers*, the moſt proper and effectual Medicines are ſuch as potently evacuate by Stool, and gradually correct the Acrimony of the Blood, and are before ſpecified. To Adults I would recommend, for theſe Purpoſes, before other Things, the aforeſaid Decoctions of the Woods, or the Decoction of the Root of the Lapathum Acutum, or of the Herb Fumitory. Of either of theſe is to be taken the Quantity of eight or ten Ounces, three or four times a Day, warm; and, after the firſt Draught in the Morning, it will be proper for the Patient to compoſe himſelf in his Bed, and to ſweat. To theſe may not improperly be added, the Eſſences of Fumitory, of the Woods, and of Amber, or the tartariſed Tincture of Antimony, to the Quantity of thirty or forty Drops, to be taken ſeveral times a Day, with the forementioned Decoctions; alſo abſorbent Powders mixed with Antimony and Flowers of Sulphur, and the Uſe of the ſame is to be continued for ſome time; but a careful and exact Regimen ſeems as neceſſary here as in any Caſe whatever. For Infants not weaned from the Breaſts, it has been found of great Service to uſe Medicines which gently purge and correct the Blood, the Mother, or Nurſe, who ſuckles the Child, being injoined a ſtrict Regimen, beſides the Uſe of the Remedies before-mentioned. Topics proper in this Circumſtance are, principally, Oil of Tartar *per Deliquium*, applied two or three Times a Day with a Pencil, or Feather, either alone, or mixed with Oil of Eggs and Wax; after which, the Place muſt be covered with a Plaiſter, either the Lead Plaiſter, or *Emplaſtrum de Minio*, or *Emplaſtrum de Sperma Ceti cum Camphora*, to ſecure it from Injuries by the external Air. Where the Diſeaſe has ſpread itſelf over the Face, as it often happens in Infants, a Plaiſter is not convenient; and it is better to adapt a Linen Mask, or Vizard, to the Face, as is adviſed in Ambuſtions: Alſo, *Oleum Philoſophorum*, Oil of Eggs, Lime-water, and Water with which diaphoretic Antimony has been edulcorated, are good Remedies, if the Face be every Day waſhed and cleanſed with them. Inſtead of theſe, it may be ſometimes proper frequently to anoint the Place with Ointment of Litharge, or *Unguent. Diapompholygos*, or *De Enula*; mixing therewith, if the Diſeaſe be more ſtubborn than ordinary, a ſmall Quantity of Quickſilver, or red Precipitate. If the cutaneous *Ulcers* flow with Sanies, like thoſe of the rheumatic Sort, it may be neceſſary to treat them every Day, with an Inſperſion of an abſorbent and drying Powder, prepared of Tutty, *Lapis Calaminaris*, Ceruſs, Chalk, or the like, mixed with native Cinnabar, or red Precipitate; or to anoint them very frequently with beaten Cream.

But of all corroſive and malignant *Ulcers*, none are more virulent or formidable than thoſe of the *cancerous* Kind, ſince they are to be treated with the ſame internal and external Remedies, as we have preſcribed for an exulcerated Carcinoma [ſee CARCINOMA]; tho' *M. A. Severinus*, a very celebrated Phyſician and Surgeon, ſeriouſly aſſures us, that we are to expect more Relief from manual than medicinal Operations, in ſuch Caſes; for many have been cured by Steel and Fire, when Medicines have been of no Uſe. When, therefore, it is determined to treat an *Ulcer* of this Kind with Burning, or Exciſion, we are to take all poſſible Care that the ſame be entirely extirpated, and that no corrupted Part remain; for that would entirely defeat the End and Deſign of the Operation. Some, inſtead of theſe ſevere Operations, uſe a phagedenic Water, prepared in the following manner:

> Take Water of Quicklime, one Pint; Sublimate Mercury, half an Ounce: Mix them together. Or, inſtead of Mercury Sublimate, uſe an Ounce, or an Ounce and half, of white Precipitate: This is to be applied warm frequently, with Lint dipped therein.

Inſtead of Sublimate Mercury, I have often uſed, with very good Succeſs, *Mercurius Dulcis*, in Lime-water, for ſtubborn *Ulcers*, as a much ſafer Medicine than the other. As for digeſtive Ointments, they are quite improper in cancerous *Ulcers*, and even found to be fatal.

If there be a Putridneſs and Fetidneſs attending the *Ulcer*, it muſt proceed either from a very depraved Habit of Body, or want of Care or Skill in the Surgeon employed in the Dreſſing. It is the Phyſician's Part here, by proper Medicines, to correct and ſtrengthen the Habit with all convenient Speed, while the Surgeon takes due Care frequently to exterge and cleanſe the *Ulcer*, and ſo much the more, if the ſame be affected with a burning and intenſe Heat: For when *Ulcers* are but ſeldom dreſſed and cleanſed, as is uſually the Caſe after great and bloody Battles when the Number of the Wounded is very conſiderable, it can ſcarce be avoided, but that the vitiated Fleſh will be infeſted with Heats, Putridneſs, or Worms. For preventing ſuch Inconveniencies, there is no readier Way, than to apply our digeſtive Ointment, mixed with *Unguentum Ægyptiacum*, or the *Unguentum Fuſcum* of *Wurtzius*, or the phagedenic Water, or red Precipitate, either by itſelf, or mixed with burnt Alum, or well worked into the digeſtive Ointment, and to continue the

Laſtly,

ſame till the corrupted Fleſh be totally conſumed, and the Bottom of the *Ulcer* comes to its natural red Colour. While this is doing, it will be convenient to wrap the affected Part in Linen moiſtened with Spirit of Wine, which is a Medicine that very potently reſiſts Putrefaction. The Sore being thus cleanſed from the putrid and corrupted Parts, the Conglutination is to be performed by the ſame Means as have been preſcribed for other Kinds of *Ulcers*, the Surgeon taking all due Care that the Patient be frequently refreſhed, and have his Spirits enlivened not only with comforting Meats and Drinks, but by ſuch cardiac and antiſeptic Medicines as are directed by the Phyſician, leſt Nature ſhould ſink, and the Strength be exhauſted under the Length of the Cure. *Verminous Ulcers* are to be treated in the ſame manner; for whatever reſiſts Putrefaction, is, alſo, an Enemy to Worms, and all due Care is ſuppoſed to be taken, at every Dreſſing, for exterging the Worms and putrid Fleſh; after which the Cure is effected by the Methods above preſcribed.

In the laſt Place, there are ſome Ulcers ſo malignant and obſtinate, that though they cannot be diſcovered to have contracted any Venereal Contagion, they yet reſiſt all the Medicines hitherto preſcribed. *In this Caſe I have learned by* long Experience, that there is no Method of Cure ſo prevalent and effectual as what is performed by means of mercurial Medicines, or by a gentle Salivation. For I have found the Blood, in ſome Patients, corrupted to ſuch a degree, as not to be lenified, much leſs corrected, without the Help of Mercury. But if there be any manifeſt Signs of Venereal Contagion contracted by the Patient, this Method of Cure by Mercury becomes abſolutely neceſſary, as we ſhall demonſtrate below.

Of the Cure of Venereal Ulcers.

Venereal Ulcers, as we have already obſerved, are generally ſeated in the Groin, or Inſide of the Thighs, being the Effects of Exulcerations of Venereal Buboes: They are, alſo, generated in the Prepuce, Frenum, and Glans of the Penis; in which Caſes they take the Name of *Cancri*, in *French*, *Chancres*, (whence the *Engliſh Shankers*); in Women they infeſt the Vagina, and *Labia Pudendi*; ſometimes the Noſe, Palate, Lips, Fauces, Tongue, and Uvula, the Forehead, Cranium, and other Bones, are affected with them; and one ſingle Ulcer of this Kind, if neglected, or ill-treated, is capable of exciting an univerſal *Lues Venerea*. The whole Affair, therefore, of the Cure conſiſts chiefly in evacuating and eliminating, by proper Medicines, as ſoon as may be, the Poiſon of the Venereal Infection.

No Medicines are better adapted to this Purpoſe, than Cathartics, incorporated with *Mercurius Dulcis*, either in Pills or Powders, and frequently adminiſtered. With theſe muſt be joined the Uſe of the Woods in Decoction, for correcting the Blood, together with Eſſences of the Woods, Pimpinella alba, and Amber, and Tincture of Antimony, and the like, which are of excellent Service, when taken in the Morning early, in Bed, by promoting a moderate Sweat. A ſtrict Regimen of Diet is in no Caſe more neceſſary than the preſent: For Wine, and all other heating Liquors, as well as ſalt, acrid, and acid Meats and Drinks are highly pernicious. If theſe Remedies prove too weak and ineffectual on account of the Inveteracy of the Diſeaſe, or its Complication with the Lues Venerea, it will be neceſſary, either to uſe ſtronger Sudorifics, ſuch eſpecially as Decoctions of the Woods, with a proper Regimen; or to call in the Aſſiſtance of Mercury, in order to excite a gentle Salivation, which at once cures the Ulcer, and expels the Venereal Venom.

When theſe Kinds of Ulcers affect the Mouth, Uvula, Fauces, Tonſils, or Tongue, not only internal Remedies are to be employed, but the Mouth itſelf is to be very often waſhed with a Decoction of the Woods, either ſimple, or mixed with Honey of Roſes. After this the affected Part is to be anointed and cleanſed, either with *Hartman*'s Green-water, or Honey of Roſes, mixed with a few Drops of Spirit of Vitriol to give it a gentle Acidity; and, at laſt, it is to be healed by the Uſe of Eſſences of Amber and Myrrh, or Oil of Myrrh *per Deliquium*. If the Ulcer appears in the external Parts, the beſt Way is to apply the Digeſtive Ointment, or Baſilicum, mixed with Quickſilver, or white or red Precipitate in Lint, or *Vigo*'s Frog-ſpawn Plaiſter, or Diachylum mixed with Mercury, in order to exterge and cleanſe the Parts. After Mundification, the Ulcers are to be ſprinkled with the Eſſences juſt mentioned, or the abſorbent Powders ſo often preſcribed, which may have their Virtue augmented, by mixing with them a ſmall Quantity of red Precipitate, in order to Exſiccation and Conglutination: No leſs effectual for the Purpoſes of Cleanſing and Healing are the phagedenic Water, or Lime-water, impregnated with *Mercurius Dulcis*, applied in Lint, moiſtened therewith ſeveral times in a Day; eſpecially if the Parts be now-and-then gently touched with the Lapis Infernalis. You have, alſo, an excellent Conglutinant, after Mundification, in a ſimple Ointment prepared of Quickſilver, mixed with a ſufficient Quantity of Turpentine, or in the following Mercurial Ointment.

Take of Unguentum Mundificativum, or Diapompholygos, crude Mercury extinguiſhed in a little Turpentine, each an Ounce. Or,

Take of an Amalgama of Mercury, and Lead, one Ounce; Bole Armoniac, two Ounces; Ointment of Roſes, a ſufficient Quantity: Make them into an Ointment.

If the ſubjacent Bone be carious, it is to be treated with ſuch Remedies as are preſcribed for the Cure of a Caries [ſee the Article Os], and particularly with Euphorbium, Oil of Cloves, the phagedenic Water, or Spirit of Nitre in which Mercury has been diſſolved, or, if it may ſafely be done, with a red-hot Iron. Sometimes theſe Kinds of Ulcers in the ſofter Parts of the Body, and particularly the Groins, make a conſtant and copious Diſcharge of a Lymph; and ſuch Ulcers are found to be ſo ſtubborn, that no Medicines can be found of ſufficient Force to exterge and dry them. Such a Circumſtance is uſually attended with a Rupture, or Eroſion of ſome lymphatic Veſſel; and here we are firſt to attempt a Suppreſſion of the Flux by Compreſſes, and a ſtrait Bandage, which has ſometimes happily ſucceeded: But if a Bandage proves of no Service, there is no better Remedy for ſo foul and troubleſome a Nuiſance, than the Application of a red-hot Iron; and the ſame muſt be repeated as often as Neceſſity requires.

Venereal Ulcers of the Penis, or Glans, careleſsly treated, uſually terminate in the *Lues Venerea*, and Perforations and Corroſions of the Urethra, through which the Urine paſſes, as through a Sieve. Sometimes the whole Glans, or Penis, are affected with a Scirrhus, or Shankers, to ſuch a Degree as to require the Uſe of the Knife. If the Diſeaſe infeſts the Noſe, it commonly produces a very fetid Ulcer, called, in the technical Way of ſpeaking, *Ozæna*, which ſometimes conſumes the whole Part. Sometimes the Palate with its Bones is ſo miſerably corroded and perforated, that whatever Drink or liquid Food is attempted to be ſwallowed, is rejected through the Noſtrils: Theſe Perforations are ſeldom cloſed, or brought to a Coalition, eſpecially if larger than ordinary: They may, however, when their Orifices are conſolidated, be cloſed up with a thin Piece of Gold or Silver. It is much more uſual for the Tonſils, with the outer Membrane of the Uvula, or the entire Uvula, to be corroded and conſumed. In all theſe Affections, Mercury, and the Decoctions of the Woods, are the principal Remedies. Sometimes it happens, as I myſelf have had ſeveral Opportunities of obſerving, that the very Cranium itſelf, eſpecially about the Forehead, is corroded and perforated with a Caries, in ſo ſurpriſing a manner, as to diſcover the very Brain, with the Pulſe of the Arteries belonging to it, which are plainly to be diſcerned; whence very formidable and dangerous Symptoms muſt ariſe, the Conſequence of which is ſometimes Death, unleſs it be prevented by the ſeaſonable Adminiſtration of the before-mentioned Remedies.

Of callous Ulcers.

Ulcers of the callous Sort are ſeldom or never cured without a previous Extirpation of the *Callus*. Now there are three Ways by which the Callus may be extirpated. The firſt and gentleſt, which takes Place in a recent and ſofter Callus, is by Corroſives, and thoſe of the mildeſt Sort; ſome of the principal of theſe are burnt Alum, and red Precipitate, either uſed alone, or mixed in equal Portions, or with a Mixture of the Digeſtive Ointment, or Baſilicum, or Unguentum Ægyptiacum, or the Brown Ointment of *Wurtzius*. With ſome or other of theſe Medicines are the callous Parts to be anointed ſeveral times in a Day, and theſe are uſually effectual, eſpecially thoſe mixed with red Precipitate. But if none of thoſe milder Topics prove of ſufficient Force to eat away and conſume the Callus, it will be proper, in the ſecond Place, to make a thorough Scarification of the callous Parts, and afterwards rub them with the Lapis Infernalis, or Butter of Antimony. A third Method, no leſs expeditious than the former, is by Spirit of Nitre, or Aqua-fortis, impregnated with as much Quickſilver as can be diſſolved in it over the Coals, and every Day applied to the Part.

There is yet a gentler Way of extirpating a Callus, deſcribed by *Le Dran. Tom.* 2. *Obſerv.* 115. This Method is to apply, for four or five Days together, a Plaiſter compounded half of a Plaiſter of Diachylum with Gums, and half of *Vigo*'s Plaiſter, mixed with four times the Quantity of Mercury, to be renewed every Morning and Evening, in order to ſoften, in ſome meaſure, the Lips of the Callus. After this the Callus

is to be ſcarified, all manner of Ways, to the Bottom, the Ulcer being covered afterwards with a Bit of Lint, till the Blood, which commonly flows in ſmall Quantities from the Inciſions in the Callus, be ſtopped: This done, the ſame Plaiſter is applied over the whole Ulcer, ſo as to touch the bare and newly ſcarified Lips of the Callus. About four Days after, the Surgeon repeats the Inciſions, or *Scarification*, as it is uſually called, and renews the ſame the third or fourth time if there be Occaſion, that is, if the Callus be not diſſolved. By this Method, as the above-mentioned Surgeon affirms, is the Callus gradually ſubdued, ſoftened, and at length totally diſappears, leaving in its room a very laudable Cicatrix, without the Aſſiſtance of any other Remedy. I never had an Opportunity, I muſt confeſs, of trying this Method.

If the callous Ulcer be, alſo, fiſtulous, an Inciſion is firſt to be made into the Sinus, in the ſame manner as has been directed for a Fiſtula, before we attempt to conſume the Callus; after which the Callus is to be conſumed, by the Methods above related. If the Application of the Knife be too much dreaded by the Patient, or otherwiſe unſafe, it will be convenient to introduce into the Sinus a Tent of *Unguentum Ægyptiacum*, or the Brown Ointment of *Wurtzius*; by which means the Callus, if not very obſtinate, is inſenſibly conſumed, and may be the ſooner, if the fore Part of the Tent, before its Intruſion, be rubbed with red Precipitate, Lapis Infernalis, or Butter of Antimony, and this be continued till the Callus be conſumed. If theſe corroſive Tents will not penetrate to the Callus, the moſt convenient Method will be to uſe the Syringe, and make frequent Injections of the Phagedenic Water, or of *Unguentum Ægyptiacum*, or *Wurtzius*'s Brown Ointment, diſſolved in Spirit of Wine, into the difficult and winding Sinus, compreſſing afterwards the Mouth of the Ulcer, that the Liquor may be retained for ſome Space of Time, within. The Callus being thus removed, the Cure of the Ulcer is to be managed like that of a Fiſtula.

It may ſometimes happen, that in callous and fiſtulous Ulcers which are of long Standing, or full of Turnings and Windings, theſe corroſive Medicines are of little or no Service, or, what is worſe, may be more diſpoſed to corrode and vellicate the Nerves, and excite moſt terrible Convulſions, ſooner than conſume the Callus. In ſuch a Circumſtance it cannot but be moſt proper to make an Inciſion in the Ulcer, in the ſame manner as directed for cutting the Fiſtula [ſee FISTULA], but with all due Care and Circumſpection, for Fear of wounding ſome Artery, Nerve, or Tendon.

If neither the Method of Inciſion juſt recommended be thought of Force ſufficient, or expeditious enough, in extirpating the Callus: In this Caſe, if the Patient be endowed with a good Meaſure of Strength and Intrepidity, and the Place be ſafe and convenient, with reſpect to the Nerves and Arteries, the moſt expeditious Method that can be uſed, is to ſeparate or cut off all the Callosities with the Knife, or cauterize them with a red hot Iron. By this bold and reſolute Operation, the inveterate and ſtubborn Ulcer is, as it were, converted into a very recent Wound; and, conſequently, may be healed by common Remedies, unleſs the Cure be prevented by a Caries, a bad Habit of Body, the *Lues Venerea*, Scurvy, Dropſy, or ſome other Indiſpoſition.

Of the Cure of MAGIC ULCERS, *or ſuch as are ſuppoſed to be induced by Faſcination.*

For Ulcers on which they beſtow the Epithet of *Magic*, on account of their ſtrange Phænomena, as containing Threads, Needles, Nails, and the like, *Paracelſus*, *Helmont*, *Agricola*, and many others, have been very careful to preſcribe Remedies, which are, for the moſt part, of no Significancy, and either ſuperſtitious or idle. The beſt of them, however, ſeem to be Oak and Willow-leaves, Maiden-hair, St. John's Wort, by ſome called *Fuga Dæmonum* on this Account, Quickſilver, Aſa-fœtida, Antirrhinum, and ſome others: Any one of theſe, either hung about the Neck, or uſed in ſome other inſignificant manner, according to Preſcription, will, as it is pretended, ſecure the Body from all malevolent Influence and Effects of Faſcination. Some preſcribe the Aſhes of a Woman burnt for Witchcraft; others the Aſhes of burnt human Dung, to be ſprinkled on the Ulcer. *Heerius* and *Hoſtius* recommend eſpecially the *Unguentum de Viſco corylino*, or Ointment of Miſſelto of the Hazel, againſt magic Ulcers: *Mynſicht* prescribes his Fœtid Plaiſters: Others adviſe other Things.

Whatever our Sentiments ought to be on this Head, it is certain a Phyſician beſt conſults his own Reputation, as well as the Health of his Patient, when he treats Diſeaſes and Maladies of this Kind, which, by the ignorant Vulgar are, for Reaſons vain and ridiculous, reputed the Effects of Magic, with natural and common Medicines, or ſuch as he eſteems, upon careful and due Thought and Examination, accommodated to the Nature of the Ulcer, and eſpecially to the Habit of the affected Party; ſuch are the Remedies recommended under the preceding Heads: For though we ſhould be never ſo willing to grant, that a Perſon may ſuffer in his Body, and be diſquieted, by the crafty and cunning Tricks and Deluſions of the Devil and Magicians, yet we have no ſufficient Reaſon to convince us, that the Diſorder thus cauſed, is ſupernatural, and, on that Account, incurable by natural Means; ſo as to oblige us to have Recourſe to ſuperſtitious, ſordid, and abſurd Remedies. To this it may be added, that ignorant and ſuperſtitious Surgeons, and Attendants on Bagnios, report everywhere as magical, all ſuch Ulcers as they are not able to cure; whereas the ſame falling afterwards into more ſkilful Hands, when the true Nature and Cauſe of their uncommon Malignity comes to be diſcovered, are often healed without much Difficulty. There have been, alſo, perhaps, in former times, ſome ill-meaning Surgeons who have pronounced an Ulcer *magical*, without Foundation, in order to extort the more Money for the Cure.

Of the Cure of OLD ULCERS, *eſpecially in the Legs.*

Though no Part of the Body be ſecure from the Danger of old or inveterate Ulcers, yet are the Legs and Feet more ſubject to them than other Parts: And for this Reaſon, though we have formerly treated of malignant or inveterate Ulcers in general, we think it incumbent on us to enlarge more particularly, on thoſe which infeſt the Legs or Feet. The Cauſes of Exulcerations of the Legs are generally the ſame with thoſe of malignant Ulcers in general; for one as well as the other proceed from a bad Habit of Body, a thin and acrimonious Blood, ſome adjacent Fiſtula, Caries, or Callus: In Women, from an Obſtruction of the Menſes, and other like Cauſes. Whoever, therefore, pretends to cure an Ulcer in the Leg, muſt inquire into its true Cauſe, and to the ſame accommodate the Cure, in the Manner preſcribed above.

But before we enter into the Method of Cure, it will not be improper to inquire whether a Conglutination of ſuch inveterate Sores or *Ulcers* in the Feet and Legs can be effected with Safety; becauſe there are Inſtances in the Writings of the moſt experienced Phyſicians, where the Conſequences of ſuch Caſes have been very ſevere and dangerous Diſorders, and oftentimes moſt certain and preſent Death. I have, as I apprehend, in a great meaſure, given a ſatisfactory Anſwer to this Queſtion near the Beginning of this Diſcourſe, when I ſaid, that in Perſons far advanced in Years, and of a very bad Habit of Body, it is beſt to abſtain from Conglutination of ſuch inveterate *Ulcers*, becauſe they are a great means of Health, as being ſo many Iſſues or Outlets by which Nature is accuſtomed to expel the noxious or ſuperfluous Humours. I would not, however, without ſome weighty Reaſon, have this Rule applied to young and robuſt Perſons; for ſince the firſt Cauſes of ſuch ſtubborn *Ulcers*, either by Abſtinence and a prudent Regimen, or by Fontanels, or proper Medicines, may, without all Danger, in ſuch Subjects, be removed, it cannot be doubted but that the Conglutination may afterwards be performed with little or no Detriment to the Patient.

Tho' we have determined the Conglutination of moderate Sores or *Ulcers* in the Legs or Feet of aged Perſons to be dangerous, yet we are ſo far from thinking all Care and Medicines in their Caſe uſeleſs, that we rather pronounce them highly neceſſary. The Surgeon here has a double Duty incumbent on him; one Branch of which conſiſts in alleviating as much as poſſible the Pains and Diſorders which attend them; the other Part of his Buſineſs is to take care that the Evil may not increaſe, nor ſpread; and that no new bad Symptoms, ſuch as Pains and Inflammations, may add to the Diſeaſe by exaſperating the *Ulcer*.

In the firſt place, therefore, Abſtinence, and a very exact Regimen of Diet is to be injoined the Patient, that he may not eat to Exceſs, nor of ſuch Meats as are noxious and prejudicial in his Caſe; of which Kind are all acrimonious, hard, and crude Aliments, and Swine's Fleſh in particular. Proper and gentle Cathartics are, alſo, of Service in attracting the redundant and malignant Humours from the lower Parts, and expelling them gently by Stool. Beſides theſe, other internal Medicines, which are contrary to the Cauſe of the Diſeaſe, are occaſionally to be preſcribed; ſuch, for Inſtance, as Elixir Proprietatis, and Eſſences of Myrrh, Amber, and *Peruvian* Balſam, which, as well as all Balſamics, and Bitters, are highly ſerviceable for correcting the immoderate Thinneſs and Acrimony of the Blood in Perſons advanced in Years.

With reſpect to external Treatment, it is above all things neceſſary, that the *Ulcer* be kept clean, and once or twice every Day exterged from Sanies. After this it is to be filled with Lint, either dry, or dipt in a Decoction of the Leaves of Walnut or Birthwort, for the Reception of the acrid Humours. Upon this it will be proper to apply *Bauhine*'s Plaiſter for old

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Ulcers, or the *Emplaſtrum Diaſulphuris* of *Rulandus*, the Lead Plaiſter, the Plaiſter of Diapompholyx, or of *Lapis Calaminaris*, or any other of the like Nature. Theſe Directions being carefully and regularly obſerved, and the affected Part guarded, as much as is poſſible, from the Injuries of the Air, or external Cold and Humidities, it is not to be doubted but the *Ulcer* will prove of the mildeſt Sort, and ſerve as a Drain to the whole Body for the Evacuation of corrupted Humours, and conſequently be found beneficial and ſalutary, and highly conducive to the Prolongation of Life and Health. And really it ſeems probable, that the Obſervation of thoſe admirable and wholſome Effects of inveterate *Ulcers* in aged Perſons induced the antient Phyſicians, who followed Nature as the beſt Guide, to raiſe Fontanels in ſick and valetudinary Bodies, which might do the Office of *Ulcers* in draining and evacuating the Body of acrid and ſuperfluous Humours.

If it ſhould happen, as is ſometimes the Caſe, that by means of ſome Blow, or taking Cold, or by immerging the Leg in cold Water, or from a Fit of Anger, a Fright, Sorrow, or an improper Regimen of Diet, that the diſeaſed Part be ſeized with a Pain or Inflammation, it will be convenient to wrap the Place in a Linen Cloth folded and moiſtened with *Hungary* Water, or with theriacal, or camphorated Spirit of Wine, or with Lime-water and the ſaid camphorated Spirit, and frequently to repeat the ſame; and the Patient is to be ſtrictly injoined to keep his Leg in Bed, and to guard it from external Cold, taking every Morning ſome Cups of Tea, or ſome other Sudorific, and to ſweat well afterwards in his Bed; by theſe means the Pain and Inflammation are uſually in a ſhort time removed. But the Caſe becomes dangerous, when the Inflammation is violent, eſpecially in a corrupted and weak Body, and begins to paſs into a Gangrene. In ſuch a Circumſtance the ſame Remedies are to be employed, both internal and external, as have been preſcribed for a Gangrene [See the Article GANGRENA]. But Care is to be taken, above all things, that ſuch infirm and aged Patients be every now-and-then refreſhed with Cardiacs, and comforting Medicines, and frequently caſt into a gentle Sweat. If theſe Kinds of Remedies be poſtponed and neglected, the Danger uſually increaſes, and there is very great Reaſon to fear, that the Diſeaſe will gradually degenerate into a Sphacelus, followed by Death.

When inveterate *Ulcers* of this Kind, in old and infirm Subjects, dry up ſpontaneouſly, and turn livid, the Patients, for the moſt part, are immediately ſeized with an Horror, Nauſea, and Feebleneſs, which are Indications of a great Decay of Nature, a Corruption of the affected Part, and an extremely dangerous Condition, which often terminates in a ſpeedy Death. Under ſuch formidable Symptoms there is the greateſt Neceſſity to have immediate recourſe to a proper Diet, and corroborative Medicines for preſerving the Strength. Topics convenient to be applied to the *Ulcer* are the Roots of Gentian, or Florentine Orris bruiſed; or, if theſe prove not ſtrong enough, the Root of Black Hellebore reduced to Powder, or in Globules; or, in the laſt place, if this be ineffectual, Powder of Canthardes, or a Globule of a Bitter-plaiſter of the Shops. By this Method ſuch *Ulcers*, when in a State of Exſiccation, or in a manner dry'd up, are ſtimulated and irritated to ſuch a Degree as ſometimes to flow afreſh, and ſo begin to relieve the Patient from the malignant Humours by which he was oppreſſed, after which the *Ulcer* is to be treated in the manner preſcribed. But if theſe Medicines prove of no Effect, and the *Ulcers* continue in a State of Dryneſs, there remains no Hope of the Patient, whoſe Caſe is deſperate, and Death unavoidable. *Heiſt. Chir.*

ULEX. A Name for the *Genſta ſpartium*; *majus*; *brevioribus aculeis*.

ULMARIA.

The Characters are;

The Leaves are pinnated, reſemble thoſe of Agrimony, are triangulated, and divided after the Manner of thoſe of umbellated Plants. The Apex of the ſmall Pedicle is expanded into a monophyllous, quinquefid Calyx, which is expanded like a Star. The Flowers are roſaceous, pentapetalous, collected into Panicles, ſcarce viſible, and furniſhed with numerous Stamina. The Ovary, which grows in the Centre of the Calyx, conſiſts of three, four, or five little Pods, furniſhed with a Tube, and becomes a Fruit compoſed of a Multitude of ſmall membranaceous intorted Sheaths, collected into an Head, and containing one ſmall Seed.

Boerhaave mentions two Sorts of *Ulmaria*; which are,

1. Ulmaria. *J. B.* 3. 488. *Raii Hiſt.* 1. 623. *Synop.* 3. 280. *Boerh. Ind. A.* 295. *Tourn. Inſt.* 265. *Ulmaria Regina Prati.* Offic. *Ulmaria vulgaris.* Park. Theat. 592. *Ulma Regina Prati.* Cet. 880. Emac. 1043. *Ulmaria Barba Capri floribus compactis.* C. B. P. 164. MEADOW-SWEET.

Meadow-ſweet has a long, reddiſh, fibrous Root, from which ſpring ſeveral pinnated Leaves, having two or three Pair of oppoſite large ſerrated Pinnæ, with an odd one at the End, cut into three Parts; they are hoary underneath, and green above, wrinkled, and full of Veins, and having ſeveral very ſmall Pieces between the Pinnæ; the Stalk is red and angular, growing two or three Feet high, beſet in an alternate Order with the like Leaves. The Flowers grow upon the Top of the Stalks, Umbel-faſhion, being ſmall, five-leaved, and full of Apices of a white Colour, and are followed by little round Heads, made Screw-faſhion, of ſeveral Seeds ſet together. It grows in moiſt Meadows, and by River Sides, and flowers in *June*. The Leaves and Tops are uſed.

They are alexipharmic and ſudorific, and good in Fevers, and all malignant Diſtempers; they are, likewiſe, reſtringent, binding, and uſeful in Fluxes of all Sorts: They are put into the *Aqua Lactis*.

The only Officinal Preparation is the *Aqua Ulmariæ*. *Miller's Bot. Off.*

Its Leaves have an herby, ſaltiſh, and glutinous Taſte; they give a faint-red Colour to the blue Paper; the Root gives it a deep one; it is ſtyptic, and a little bitter; its Salt ſeems to reſemble the Sal Ammoniac; but is united with a great deal of *Sulphur, and a pretty deal of Earth.*

By the chymical Analyſis it yields ſome acid Liquors, ſome volatile concrete Salt, a good Quantity of Sulphur, and a pretty deal of Earth: Thus it is ſudorific, cordial, and vulnerary. The Decoction of its Root in Water is very good in malignant Fevers, and is preferable to that of *Scorzonera*.

The Extract of its Root is ſaid to be ſudorific, but it is very moderate; for though you ſhould give a Dram of it in the Morning, another in the Afternoon, and a third at Night, with a Grain of Laudanum, you muſt continue this Practice for two or three Days, before you can perceive any conſiderable Effect. The ſame is, alſo, obſervable in other Sudorifics. A Decoction of its Root is deterſive and vulnerary. Its Juice enters the *Emplaſtrum Felicis Wurtzii. Martyn's Tournefort.*

The Flowers, infuſed in Wine or Beer, communicate to them a grateful Smell and Taſte in manner of the *Pimpinella*. The Flowers are of a pleaſant Smell, exhilarating the Heart without oppreſſing the Head, whence they are very proper in Summer-time to adorn or be ſtrew'd in Parlours and Dining-rooms. One *Renætus* of *Rochelle*, as we are told by *J. Bauhine*, affirms, that the Flowers communicate a grateful Smell to Metheglin, and improve it to ſuch a Degree as to compare with the Wine of *Crete*, or *Candy*, which they call *Malmſey*.

I myſelf have ſeen, and can ſolemnly affirm, ſays *S. Pauli*, that *Queen of the Meadows* has had ſurpriſing Effects on a Girl who had a mortal Wound in the Bladder, and in an almoſt incurable Fracture of the Arm; whence it juſtly deſerves to be an Ingredient in the moſt celebrated and uſeful Plaiſter of *Felix Wurtzius*, who highly extols the Roots of this Plant, and ſeems to prefer it before all other Vulneraries, or any ſuch as are recommended in Fractures. *Raii Hiſt. Plant.*

2. Ulmaria; floribus in longas ſpicas congeſtis. *Barba Capræ, floribus oblongis.* C. B. P. 163. T. 205. *Barba Capri.* J. B. 3. 488. *Boerh. Ind. alt. Plant.*

Ulmaria is antiſpaſmodic, antiepileptic, corroborative, and aſtringent: Hence our Peaſants uſe it in a Dyſentery, and Diarrhœa, and to repreſs Vomiting. I have found it, alſo, of Service in regulating the diſorderly Motions of the Heart, Blood, and Spirits; and where-ever Condenſation, Strengthening, or Aſtriction are required, this Herb is of excellent Uſe. The Leaves are good for an Hæmoptoe; and the bruiſed Root is applied to Wounds, in order to ſtop the Blood, and conſolidate the Part. A Decoction of the Roots is proper in malignant Fevers. *Hiſt. Plant. adſcript. Boerhaav.*

ULMUS.

The Characters are;

The Flower is monopetalous, Bell-ſhaped, and adorned with many Stamina. The Ovary in the Centre of the Flower becomes a foliaceous, Heart-ſhaped Fruit, ſoon mature, concealing in the Middle a membranaceous, Pear-ſhaped Capſule, full of a Seed of the ſame Figure.

Boerhaave mentions four Sorts of *Ulmus*; which are,

1. Ulmus; campeſtris, & Theophraſti. *C. B. P.* 426. *Tourn. Inſt.* 601. *Boerh. Ind. A.* 220. *Ulmus.* Offic. J. B. 1. 139. *Ulmus vulgaris.* Park. Theat. 1404. *Ulmus vulgatiſſimus folio lato ſcabro.* Ger. Emac. 1480. Raii Hiſt. 2. 1425. Synop. 3. 408. COMMON ELM.

The Elm is one of the commoneſt Trees we have: It has a rough thick Bark, and the Branches are cloathed with ſomewhat rough, crenated, green Leaves. The Flowers are ſmall and flammous, coming out early in the Spring before the Leaves. The Seed is round and foliaceous.

The Bark is principally uſed, being abſterſive and cleanſing, and is frequently uſed in Gargariſms for ſore Mouths and Throats, to clear them of tough viſcid Phlegm. It is, likewiſe, accounted good for Ruptures, and to conſolidate Wounds. *Miller's Bot. Off.*

The

The Seed of the *Ulmus* is called *Samera*; and is ripe about the latter End of *April*.

As to its Virtues, according to *Dioſcorides*, the Leaves, Tops, and Bark, are of an aſtringent Quality. The Leaves bruiſed in Vinegar are effectual againſt the Lepra, being rubbed on the Parts, [*Galen* aſcribes this Virtue to the Bark, *Pliny* to both the inner Bark and Leaves] and conglutinate Wounds, and much more effectually if the Bark be bound about the Place inſtead of a Fillet. The Roots have the ſame Virtue of conglutinating Wounds, and the Decoction of the Roots, or, according to *Dioſcorides*, of the Bark of the Roots, is uſed by ſome to waſh Fractures, in order to accelerate Conſolidation by inducing a Callus. The ſame Decoction is ſaid to mollify Hardneſſes of the Joints, and to reſolve Convulſions of the Nerves. The fat Subſtance ſwimming on the Decoction, reſtores Hair fallen off, being rubbed on the Place. The Bark of the Root bruiſed, and worked up with *Muria*, into a Malagma, mitigates the Pain of the Gout.

A Dram of the Bark [an Ounce] taken in an Hemina of cold Water [*Dioſcorides* ſays in Wine or Water] works by Stool, and particularly upon phlegmatic and watry *Humours*. *Plin. Dioſcorides*. It is ſtrange, ſays *Ray*, that an Aſtringent ſhould purge. *Pliny* commends the Tear for Collections [Abſceſſes] Wounds, and Ambuſtions; but the Elm in our Country, ſays *Ray*, diſcharges no Tears, either ſpontaneouſly, or from Wounds.

The Bark of the Tree boiled in common Water to near the Conſiſtence of a Syrup, and then mixed with a third Part of Aqua Vitæ, is a ſingular Remedy againſt the Pain of the Sciatica, the Part affected being fomented with it for ſome time by the Fire.

The Humour found in the Follicles, which grow on the Leaves, rubbed on the Face, brightens the Skin, and makes the Countenance more amiable. *Matthiolus* writes, that it cures the Enterocele in Children, if Bolſters dipped therein are applied to the Groin, and tied under their Thighs. *Fallopius* ſays, that he never found any thing more effectual in Agglutination than this Liquor. Of the ſame is prepared an Oil, which, as we are aſſured by *Sylvius*, is of extraordinary Efficacy in Wounds; but we could never obſerve, ſays *J. Bauhine*, that Oils had any good Effect on ſimple Wounds, but rather fill them with Sordes, and prevent their Conglutination. *Raii Hiſt. Plant.*

2. Ulmus; folio latiſſimo ſcabro. *Ger. Emac.* 1481. *Raii Hiſt.* 2. 1426. *Synop.* 3. 469. *Tourn. Inſt.* 601. *Boerh. Ind. A.* 220. *Ulmus montana.* Offic. C. B. P. 426. *Ulmus latiore folio.* Park. Theat. 1404. THE WYCH HAZEL.

This is found frequently in Hedges. The Bark is uſed in Medicine, and agrees in Virtues with that of the preceding Elm.

3. Ulmus; minor, folio anguſto, ſcabro. *Ger. Emac.* 1480.

4. Ulmus; folio glabro. *Ger. Emac.* 1481. Park. Theat. 1404. *Boerh. Ind. alt. Plant.*

ULNA. The Name of a Bone in the fore Arm. See BRACHIUM.

ULNARIS MUSCULUS. *Winſlow* deſcribes three Muſcles under this Name; the *Ulnaris Internus*, the *Ulnaris Externus*, and the *Ulnaris Gracilis*; for which laſt ſee PALMARIS LONGUS.

The ULNARIS INTERNUS is a long Muſcle, fleſhy at its upper Extremity, and tendinous at the other, ſituated on the outer Part of the Ulna.

It is fixed by its upper Part in the back Side of the long or internal Condyle of the Os Humeri, in that Part of the Olecranum which is next the Condyle, along the upper Half of the Ulna very nearly; and to the Middle common Tendon of the neighbouring Muſcle, termed commonly *Profundus*.

It runs in the Direction of the external Angle of the Ulna, and ends by a long Tendon in the *Os Piſiforme*, or *Orbiculare* of the Carpus, reaching, alſo, to the *Os Uneiforme*, being united to the Ligament common to theſe two Bones.

When the *Ulnaris Internus* acts alone, or as the principal Mover, it brings the Hand obliquely toward the internal Condyle, and toward the Olecranum, though with Difficulty.

When it acts together with the *Radialis Internus*, it turns the Hand equally towards the two Extremities of the Bones of the fore Arm; and thereby moves not only the Carpus in general on the fore Arm; but, alſo, the ſecond Row of the Carpus on the firſt, and the metacarpal Bones on the ſecond.

When it acts with the *Ulnaris Externus*, it turns the outer Edge of the Hand toward the Olecranum.

The ULNARIS EXTERNUS is a long Muſcle lying on the Outſide of the fore Arm, fleſhy toward the Os Humeri, and tendinous toward the Carpus.

It is fixed above to the external Condyle of the Os Humeri, being there united to the *Anconæus minor*; to the annular Ligament of the Head of the Radius, and to the upper Half of the external Angle of the Ulna. From thence it advances, and forms a Tendon, which paſſes through the external Notch at the lower Extremity of this Bone, on one Side of the Styloide Apophyſis.

The Tendon having afterward paſſed under a particular Ligament ſituated near the Os Cuneiforme of the Carpus, is inſerted in the Outſide of the Baſis of the fourth metacarpal Bone; ſending ſome tendinous Filaments to the Baſis of the little Finger. It is, alſo, often fixed in the Baſis of the third metacarpal Bone.

When the *Ulnaris Externus* acts with the *Ulnaris Internus*, it turns the outer Edge of the Hand toward the Olecranum.

With the *Radiales Externi*, it turns the Back of the Hand toward the outer Condyle. This Motion is termed *Extenſion*, but very improperly, when applied to the Hand; for the *Metacarpus*, which is naturally bent this Way, will be ſtill more bent by the Action of theſe Muſcles. I ſhould chuſe, therefore, to term this Motion the Inverſion, rather than the Extenſion, of the Hand. The *Carpus*, indeed, may, in ſome Senſe, be ſaid to be extended, becauſe the Bones of the ſecond Row are brought to a ſtraiter Line with thoſe of the firſt.

When this Muſcle acts alone, it brings the outer Edge of the Hand obliquely toward the *Olecranum*, and the external Condyle, at the ſame time; but this is performed with Difficulty. *Winſlow's Anatomy.*

ULOMELIA, ὑλομελία, *Ionice*, ὑλομελίη, from ὖλος, for ὅλος, entire, and μέλος, a Limb, in *Hippocrates*, ſignifies the entire, abſolute, eſſential, and univerſal Nature of any Thing. This appears to be the Senſe of the Word in the following Paſſages, *Lib. de Artic.* περὶ δὲ ὧν ὑλομελίης γεγράψεται, "there "will be a Treatiſe of the full and complete Nature of the "Glands;" where *Galen*, in his Comment, expounds the Place by τὴν ὁλόκληρον φύσιν τῆς τῶν ἀδένων φύσιος, "the perfect and "entire Nature of what eſſentially belongs to the Glands." The Word is uſed in the ſame Senſe in two Places of the Treatiſe *de Glandulis*, from which *Erotian* expounds ὑλομελίης by ὅλης φύσεως, "the entire Nature." Again, *Lib. de Aliment.* where we read, κατὰ μὲν ὑλομελίην πάντα, the Paſſage imports, that all the Parts conſpire, or are accommodated to the univerſal Good or Benefit of the Whole; and κατ' ὑλομελίην is there oppoſed to κατὰ μέρος, which is uſed to expreſs a particular Relation and Conſent of the Parts among themſelves. We read, alſo, in his Epiſtles, ὑλομελίῃ τῷ σκήνεος, by which he plainly means, "the univerſal Nature of the Body," which he recommends to the Study of a Phyſician. *Heſychius* takes ὑλομελίη for an Adverb, and expounds, by καθόλου, συλλήβδην, "univer-"ſally, comprehenſively;" and adds, that ſome underſtand it, ἐπὶ τῆς ἄψρόας τῶν ὅλων φύσεως, τὸ γὰρ ὅλον ὕλον λέγει, "of the "complex Nature of things; for ὅλον he calls ὕλον."

Οὐλομελίη ſignifies, alſo, a Perfection and Soundneſs in all the Members; and ὑλομελὴς is abſolutely perfect in all the Parts, and is expounded by ὑγιὴς, ὁλόκληρος, "ſound, entire:" And thus it imports, in *Lib. de Corde*; where we read, τὴν μὲν γὰρ καρδίην ἰδοις ἂν ῥιπταζόμενον ὑλομελέϊ, "you may obſerve the "Heart agitated in every Part which belongs to it."

ULON, οὖλον, in the Plural *Ula*, οὖλα, are the Gums or Caruncles which are placed about the Teeth. Οὖλα, ſays *Ruffus Epheſius*, αἱ περὶ τὰς τῶν ὀδόντων ῥίζας σαρκες; "The *Ula* are "the fleſhy Parts about the Roots of the Teeth." But *Pollux* tells us, that the οὖλα are the Fleſh which incompaſſes the Teeth on the Outſide; and that the Fleſh which ſurrounds them on the Inſide is called ἔπουλα (*Epoula*); ſee EPULON. The Gums are ſaid to have this Name beſtowed on them on account of their Softneſs and Tenderneſs; for οὖλος, in *Heſychius*, is expounded τρυφερὸς καὶ ἁπαλὸς, "delicate and ſoft;" and *Erotian* explains οὖλῳ ἐρίῳ, τῷ μαλακῷ, "ſoft Wool." The ſame Author ſays, that οὖλον ἐρύθιον ſignifies τὸ πυῤῥὸν, "red, or ruſſet-"coloured;" and by ſome is taken to mean τὸν ἰσομεγέθη ἐρύβῃ ἀκροχερσίτῃν, "a Wart, of the Bigneſs of a Vetch." Οὖλα, in *Hippocrates*, *Lib.* 2. *de Morb.* is put for a Tumor and Diſorder of the Gums.

Ulæ, οὖλαι, alſo, ſignifies the Gums, 7 *Epid.* where we read, οὖλων ὑπερσάρκωσις, "a fleſhy Excreſcence in the Gums," &c. But *Lib.* 5. *Epid.* we read it οὖλον, and the ſame is repeated. Οὖλαι, alſo, in *Erotian*, is expounded by κρῖθαι (*Critha*), "Grains of Barley."

ULOPHONOS, οὐλοφόνος. The Name of a poiſonous Plant; the ſame as IXIA.

ULPHA. *Rulandus* explains this by *Lapſatura*; *Caſtellus* by *Recrementum Cutis.*

ULRACH. Dragons Blood. *Rulandus.*

ULTRAMARINUM. Ultramarine. A fine Magiſtery of *Lapis Lazuli*, of a fine blue Colour, much uſed in Painting, but not in Medicine. *Junker* deſcribes the Method of preparing it.

ULVA. A Species of Moſs. See the Explication of botanic Terms, under the Article BOTANY.

ULULA,

ULULA. Offic. Aldrov. Ornith. 1. 538. Bellon. des Oyſe. 142. Geſn. de Avib. 700. Mer. Pin. 171. Jonſ. de Avib. 32. Charlt. Exer. 78. *Strix cinerea.* Will. Ornith. 68. Raii Ornith. 105. Fjuſd. Synop. A. 26. THE GREY OWL.

The Parts in Uſe are, the Gall, Fat, and Fleſh. The Gall is commended for the Albugo, Cataracts, and Films; the Fat for clearing the Sight; the Fleſh boiled in Oil, and that Oil mixed with Sheep's Butter and Honey, is good to heal Ulcers. *Pliny.* It is eſteemed by ſome for the Gout. *Dale.*

UMARI. See CAMARINHAS.

UMBELLA. See FLOS UMBELLATUS, in the Explication of botanical Terms, under the Article BOTANY.

UMBELLIFERA ALSATICA. A Name for the *Oreoſelinum, pratenſe; Cicutæ folio.*

UMBELLIFERA CANARIENSIS. A Name for the *Buplevroides; quæ Simpla nobla Canarienſium.*

UMBELLIFERA, FOLIO PANACIS. A Name for the *Paſtinaca, folio quaſi Libanotidis latifoliæ*; and, alſo, for the *Paſtinaca; ſemine longiſſimo.*

UMBILICATA LINIFOLIA. A Name for the *Omphaloides; Luſitanica; Lini folio.*

UMBILICUS MARINUS. Officin. *Operculum Cochleæ cælatæ.* Bellon. de Aquat. 430. Mont. Exot. 6. *Operculum Cochlearum marinarum ſubrotundum in ſe contortum.* Long. Math. Teſt. 56. This is the Cover of the *Cochlea Cælata*, and is a ſtony kind of Subſtance, of a flat Superficies, remarkable for a ſpiral Line of a deep-yellow Colour, hollow in one Part, after the Figure of a Navel, of a carnation, or igneous Colour, and an earthy Taſte. As to the Virtues, *Johnſon* ſays it ſtimulates to Venery.

Auguſtinus Scilla is perſuaded, that theſe Subſtances are either the Eggs of the *Cochlea*, or ſome other ſhort, imperfect Productions of the ſame: But the ingenious Mr. *Ray*, when he was on his Travels in *Italy*, and at *Rome*, procured the Fiſh itſelf juſt taken out of the Sea, alive, in its Shell, with this kind of Operculum or Cover over it.

UMBILICUS VENERIS. A Name for the *Saxifraga*; *Sedi folio, anguſtiore, ſerrato.*

UMBILICUS VENERIS is, alſo, a Name for the *Cotyledon*; *maior.*

UMBILICUS, is, properly, the Navel.

UMBLA. The Name of a River Fiſh, ſomewhat like the Trout. It is eſteemed very good Food, and to be aperient, and reſolutive.

UMBRA. Offic. Salv. de Aquat. 115. Raii Ichth. 299. Fjuſd. Synop. Piſc. 95. Rondel. de Piſc. 1. 132. Geſn. de Aquat. 1029. *Umbra marina.* Aldrov. de Piſc. 81. Bellon. de Aquat. 120. THE GRUNTER, or SHADOW-FISH.

It is taken in the *Mediterranean* Sea. The Parts in Uſe are, the Bones found in the Head, and called in the Shops *Lapides Labrunæ*: Theſe are commended for the Colic, and, in *France*, are commonly ſet in Silver, and ſold by the Goldſmiths under the Name of Colic-ſtones: For, they ſay, if it be only carried about one, or worn about the Neck, it not only removes the Pain of the Colic, but prevents its Return. *Bellon. Dale.*

UMBRACINES. Pigmies. *Rulandus.*

UMBRATILIS PUGNA, *Græc.* σκιαμαχία is a Species of Gymnaſtics, in which the Patient fights with Head and Heels, or boxes and wreſtles with a Shadow. He is not only to uſe his Hands, ſays *Oribaſius*, but his Legs, in this Encounter with a Shadow; and ſometimes to put himſelf in a Poſture of Leaping, and throwing himſelf on his Adverſary, and to uſe his Heels like a Wreſtler; ſometimes he is to preſs, or ſpring forward; and ſometimes to retreat, as from a ſuperior Force. The Patient, in this kind of Exerciſe, did not always fight with a Shadow, but ſometimes encountered a Pillar, or a Poſt. Of this *Umbratilis Pugna* we find not only Notice taken in *Plato*, who, in his *Apology*, and elſewhere, ſays, of thoſe who fought without an Adverſary, that they did σκιαμαχεῖν, "combat a Shadow;" but, alſo, by St. *Paul*, who, 1 *Cor.* ix. alludes to it, in theſe Words, ἐγὼ οὕτως πυκτεύω, ὡς οὐκ ἀέρα δέρων, "ſo "fight (box) I, not as one who beateth the Air." *Mercurialis de Art. Gymnaſt.* p. 191.

The *Umbratilis Pugna*, or *Sciamachia*, is good to remove the Sense of a Latitude, to ſtrengthen the Shoulders, and for Weakneſs of the Nerves, and a Tremor; it, alſo, draws the Humours downwards, eſpecially in thoſe who act the Wreſtler in ſtanding on Tiptoe; and it is of good Service to the Kidneys, and *Sciatica Colon*, and in Diſeaſes of the Thorax. *Oribaſ. Med. Col. Lib.* 6. *Cap.* 29.

UMBU. See IVA-UMBU.

UMBU. Piſon. *Pruniſera Braſilienſis Fructu magno, radicibus tuberoſis.*

In Bignets, Structure, and Fruit, it appears, at a Diſtance,

like a ſmall Citron or Lemon-tree; the Trunk is ſhort, and not thick, but divided into a Multitude of twiſted Branches, of a weak Contexture; the Leaves are not large, but ſmooth, and of a lively Green, but of an acid and aſtringent Taſte; it bears a whitiſh Flower; and the Fruit is of a yellowiſh White, and reſembles a pretty large Plum, but has a harder Pulp, tho' but little in Quantity, becauſe it covers a large Stone, as does the Fruit *Acacia*; and when it is ripe, in the rainy Months, becomes of a very grateful Taſte, being of an acid mixed with a Relliſh of ſweet; but is, otherwiſe, ſo harſh, as to ſet the Teeth on Edge; and is, therefore, reſerved for the ſame Uſes as the Leaves, which are adapted to the Intentions of refrigerating, and aſtringing: The Root, which has ſomething peculiar, and remarkable, beyond the Roots of other Trees, ſpreads far and wide under-ground, and ſwells to various thick and ponderous Tubera, which, if you conſider their Shape and Colour on the Outſide, which is an Aſh-colour, you would take for large Potatoes, or Roots of the *Linhyama*; but, when their outer Pellicle is taken off, they will appear different; for, on the Inſide, they are of a Snow-white Colour, and full of a ſoft and ſucculent Pulp, exactly like that of the Gourd, and diſſolving, in the Mouth, into a cold watery Juice, very ſweet, and grateful to the Palate.

It is highly comfortable and refreſhing to feveriſh Perſons, to ſuch as labour under violent Heats, and to Travellers, as I have often experienced, ſays *Piſo*; and, in the Sweetneſs and Wholſomeneſs of its Water, is not at all inferior to the Citrul. *Raii Hiſt. Plant.*

UNCAM. Quickſilver. *Rulandus.*

UNCIA. An Ounce.

UNCINUS. A ſmall Hook. *Caſtellus.*

UNCTIO. Unction.

UNCTUARIUM. A Room, in the antient Baths, where People were anointed.

UNCTUOSITAS. Unctuoſity, or Unctuouſneſs.

UNCUS. An Hook: Of which many Sorts are uſed in Medicine.

UNDATIO. A kind of preternatural Motion of the Heart. It ſhould ſeem to be that Sort of Motion which makes an undulating Noiſe, perceiveable externally.

UNDIMIA. A kind of œdematous Tumor, the Matter of which is coagulated, and glutinous, like the White of an Egg.

UNEDO. See ARBUTUS.

UNGUEN. An Ointment.

UNGUENTARIUS. A Vender of Ointments, and Perfumes.

UNGUENTUM. An Ointment.

Ointments are divided into ſimple and compound; though it ſo happens, that ſome of the former are conſiderably compounded: And, amongſt the latter, there are ſome ſimple Ointments, and others very little compounded.

It frequently occurs, that Turpentine, Ceruſe, Lard, and ſome other Things, are ordered to be waſhed in Roſe-water, or the Juice of ſome Herbs; but this is a Circumſtance that avails ſo little to any Purpoſe of Moment, that I never knew it complied with: So that a Continuation of ſuch Directions ſeems principally to be in Compliment to the old Preſcriptions, which abound in ſuch minute Exactneſſes. It may here, alſo, be obſerved in general, that where Oil is directed in an Ointment or Plaiſter, the wholeſale Traders, who ſeek only Profit, generally ſubſtitute Lard; and where Ceruſe, Minium, or Litharge are concerned, they are generally uſed in Over-proportions, becauſe they make ſuch a Weight come out much cheaper.

The *Unguentum album Camphoratum*, and *Rubrum deſiccativum*, are much of the ſame Intention, though the former is the more cleanly Medicine, and moſt in Uſe; and there is no Circumſtance in their Making, of Conſequence, but the mixing of the Camphire, when the other Materials are ſo cool, that their Heat will not evaporate it; but even long Keeping will, in a great meaſure, if not wholly, loſe it: So that the Goodneſs of theſe is ſolely known by their ſmelling ſtrong of this Ingredient. The *Unguentum de Minio Camphoratum*, *è Plumbo*, and *Nutritum*, are within the ſame Intention: But the two former are not uſed; and the latter is ſo inconvenient, upon account of its ſoon growing dry, and even milky, that it is, alſo, but in little Eſteem: The common Diachylon, alſo, lowered into an Ointment, with a little Oil, is the ſame thing, and of a much ſmoother and better Conſiſtence. The *Unguentum Tutiæ* comes in too, as a Dryer, and a Cooler; but hath nothing remarkable in its Making, and is principally uſed againſt Inflammations in the Eyes.

The *Unguentum Ægyptiacum* is the only one, amongſt many others, brought to a Conſiſtence with Honey, that is in Uſe; and

and this principally in Sores of the Mouth, where thoſe Things which are more properly Ointments, are nauſeous. The green Colour of Verdegriſe changes black in the Boiling.

The *Unguentum ex Apio*, amongſt the leſſer, and *Mundificativum ex Apio*, amongſt the greater Compounds, are exactly the ſame: But I never knew any thing made or preſcribed under either of theſe Titles.

The *Unguentum è Gummi Elemi*, moſt commonly called *Linimentum Arcæi*, from the Name of its Inventor, and the *Baſilicon Minus*, are the principal in Uſe amongſt our Surgeons, for deterging Dreſſings; though there are others of like Intention, and ſome of them newly added, from the Experience of Perſons now living, which are not yet ſo much eſtabliſhed in the Shops; as the *Unguentum Baſilicon flavum*, *Unguentum aureum*, *è Reſina*, and *Detergens*.

There are ſome conſiderable Compoſitions of this Form, in the Intention of Emollients, at the Head of which is the *Unguentum Dialthææ*; but the great Demand for this, as it is much uſed, hath taught the wholeſale Men very greatly to ſpoil it, in order to render it cheaper; for they accuſtom themſelves to make it without the Mucilages, and counterfeit their Scent with a little Fenugreek Powder; the Neats-foot Oil, alſo, is hardly to be expected from them: When it is good, it is of a yellow Colour, and no ill Scent. The *Unguentum Liliorum*, *de Mucilaginibus*, and *Emolliens*, are of the ſame Intention, but not in Uſe.

Amongſt the compound Ointments, there are ſome which take in a Number of very warm aromatic Ingredients, and ſeem deſigned for Paralytic Infirmities, and Caſes that require briſk attenuating Applications: Of theſe are in moſt Eſteem, the *Unguentum Martiatum*, and *Nervinum*; both which are much the beſt when freſh made; though that can be done but once in a Year, when the Ingredients are in their proper Seaſon.

There are Ointments, alſo, within the Intention of Strengthners; but this at firſt View ſeems to be a very improper Form for ſuch Things; becauſe an Aſtringent, in an unctuous Vehicle, is the moſt unſuitable manner poſſible for its Application; the Slipperineſs of the one entirely fruſtrating the Efficacy of the other: For which Reaſon, thoſe few, that yet keep a Place in the Diſpenſatory, are entirely neglected; neither the *Unguentum Maſtichinum*, nor the *Aſtringens*, being ever made; altho' it hath ſo happened, that the latter is twice preſcribed in the laſt Diſpenſatory, but the ſecond time under the Title of *Unguentum Sumach*.

The next Intention, of any Conſequence, for which we are provided by this Form, and which ſeems as ſuitable to it as any, is againſt cutaneous Foulneſſes, as the Itch, and ſuch-like Diſtempers; and this ſeems to be the Reaſon that there is ſuch Choice of them now given: But tho' moſt of theſe have the Reputation of great Antiquity, and hold their Places in abundance of officinal Diſpenſatories down to the preſent, eſpecially the *Unguentum Fœtidum Nicotianæ*, and *Ex Oxylapatho*; yet they are ſo uncleanly in Uſe, that they are almoſt altogether fallen to Neglect, unleſs in ſome of our Hoſpitals, thoſe which contain Mercury being much more neat, and efficacious, for the ſame Purpoſes, as the *Unguentum cæruleum*; but even this muſt greatly give Place to many Preſcriptions, for Elegance, which are to be met with only in extemporaneous Practice for the ſame Intentions.

Some other Things, of this Diviſion, are, little leſs than Oils, brought into Ointments by the Exchange of Oil for Lard; as the *Unguentum Roſaceum*, and *Sambucinum*, with ſome others, newly added, not yet brought into Uſe; as the *Unguentum Digitalis*, *Linariæ*, and ſome few others; but theſe require no particular Remark. Some others, alſo, pretty difficult to tell what they were intended for, as the *Valentia Scabioſæ*, *Tapſi Valentia*, *Tapſimel*, and *Unguentum Splanchnicum*, cannot be of any great Service to inquire into, eſpecially as they are neither regarded in the Shops, or Preſcription. The *Unguentum Populeum*, and *Diapompholygos*, are deſigned as Coolers, but now daily give Place to much neater Ointments in extemporaneous Practice. The Pomatum only remains, of this Diviſion, to be taken notice of; but both the Making and Uſe of that is almoſt entirely got amongſt the Women; that which is directed in the Diſpenſatory being of no manner of Regard. *Quincy's Præct. Pharm.*

UNGUENTUM ÆGYPTIACUM. See ÆGYPTIACUM UNGUENTUM.

UNGUENTUM ÆGYPTIACUM MAGIS COMPOSITUM.

A more compound Egyptian Ointment.

Take of Verdegriſe, four Ounces; of the ſharpeſt Vinegar, ſix Ounces; of Honey, one Pound: Let them all boil over a gentle Fire, to a duſky Colour; adding, towards the latter End, of Roch Alum, and Sal Ammoniac, of each half an Ounce; and make them into an Ointment.

UNGUENTUM ALBUM. See ALBUM UNGUENTUM.

UNGUENTUM AMARUM.

The bitter Ointment.

Take of the Oils of Rue, Savin, and Mint, of each two Ounces and an half; Juice of Wormwood, one Ounce; Powder of Rue, Gentian, the leſſer Centory, and Myrrh, of each one Dram; of the Pulp of Colocynth, two Drams; of Succotrine Aloes, three Drams; of Lupin-flowers, half an Ounce; of Ox's Gall, and of Wax, of each one Ounce and an half: And boil up to an Ointment, with a ſufficient Quantity of the Juice of Wormwood.

The *Auguſtan* Diſpenſatory hath a Compoſition of this Intention, under the Title of *Unguentum ad Vermes*, which agrees with this, in many Ingredients; but that takes in many others, which *Zwelfer* juſtly finds fault with, as of no Advantage to the Medicine: This, therefore, ſeems to have had no Regard to that as a Pattern, but very plainly follows the Preſcription taken into the firſt Diſpenſatory of the College from *Foeſius*, under the Title of *Unguentum ad Lumbricos majus*, this differing from that in nothing but the Expulſion of ſome needleſs Ingredients, as the Juice of Peach-bloſſoms, *&c.* and changing Hepatic for Succotrine Aloes; but this laſt Alteration is againſt the Opinion of thoſe who prefer the Hepatic Sort in external Applications, as this is deſigned principally to anoint the Bellies of Children troubled with Worms, becauſe its more vigorous and fetid Scent is moſt likely to paſs thro' the Pores, and give the intended Diſturbance to theſe troubleſome Creatures.

UNGUENTUM AD AMBUSTA.

Ointment for Burns.

Take of the inner Rind of freſh Elder, and of the freſh Leaves of the ſame Tree, each two Ounces: Bruiſe them well, and boil them in two Pounds of Linſeed Oil, till the aqueous Moiſture is conſumed; then preſs out the Oil, and diſſolve in it ſix Ounces of white Wax; and whilſt they remain fluid, ſprinkle the following Powders therein, keeping the Whole perpetually ſtirring; Powder of Ceruſe, three Ounces; and of Calamine, one Ounce: Then taking the Mixture from the Fire, and permitting it to cool a little, add thereto two Drams of Camphire, reduced to a Powder, by being rub'd with a few Drops of Oil of Almonds: Laſtly, mix all together, ſo as to make an Ointment.

This ſeems to be an excellent Ointment for the Purpoſes expreſſed by its Title, and deſerves always to be kept in Readineſs, to provide, in the beſt manner, againſt ſuch Contingencies as we meet with every Day.

UNGUENTUM ANTIPSORICUM.

Ointment for the Itch.

Take of Elecampane-root, and the Root of ſharp-pointed Dock, each three Ounces: Slice and bruiſe them; then pour thereon three Pints of Spring-water, and a Pint of Vinegar: Boil them to an half, and ſtrongly preſs out the remaining Liquor; to which add ſix Ounces of the Leaves of freſh Water-creſſes; and two Ounces of thoſe of Sage: Let the Herbs be well bruiſed, and mixed up with four Pounds of Hogs Lard: Then boil all together, till the aqueous Moiſture is exhaled, and preſs out the Ointment; whereto put four Ounces of the Oil of Bays; and mix the whole together.

Sulphur may be hereto added, occaſionally.

If that ſtubborn cutaneous Diſtemper, the Itch, be curable by vegetable Preparations, this Ointment bids fair to effect it; but, in caſe of Failure, you ſee the Compilers order the Aſſiſtance of Sulphur, to be uſed at Diſcretion; and in the following Ointment, what rarely fails, the Aſſiſtance of Mercury.

UNGUENTUM ANTIPSORICUM CUM MERCURIO.

Ointment for the Itch, with Mercury.

This is made of the preceding Ointment, by adding thereto four Ounces of Quickſilver, killed by being ground with a proper Quantity of *Venice* Turpentine; and mixing them together, according to the Rules of Art, ſo as to make an Ointment.

The three laſt Ointments are from the *Edinburgh* Diſpenſatory.

Unguentum Astringens sive Sumach.

An aſtringent Ointment.

Take of Oil of Roſes, often waſhed in Alum-water, one Pint and an half; of white Wax, four Ounces; of unripe Galls, Cypreſs-nuts, Myrtle-berries, Balauſtines, Pomgranate-peel, Acorn-cups, Acacia, Sumach, and Maſtich, of each one Ounce: After all are well beat, macerate them for four Days in the Juice of Medlars and Services; then let them all be dried by a moderate Fire, and make them into an Ointment, with the Oil of Wax.

Unguentum Aureum.

The golden Ointment.

Take of yellow Wax, half a Pound; of common Oil, two Pounds; of Turpentine, two Ounces; of the Pine-tree Reſin, and Colophony, of each one Ounce and an half; of Frankincenſe, and Maſtich, of each one Ounce; of Saffron, one Dram: Firſt of all melt the Wax in the Oil; then put in the Turpentine, and give them a Boil together: After they have ſtood to cool a little, ſift in all the reſt, finely powdered; but add the Saffron laſt of all, and ſtir them about with a wooden Spatula, till they become an Ointment.

This is a Compoſition originally of *Meſue*, and had a Name firſt given it, both on account of its Colour, and the wonderful Virtues aſcribed to it; on which laſt Score, too, by ſome Authors, it is called *Unguentum Regis*. The *Auguſtan* Diſpenſatory, and all the Editions of the College, have received it, exactly the ſame, down to the preſent; yet I cannot learn, that it is in any great Eſteem in the preſent Practice of our Surgeons: Tho' *Zwelfer* ſays, it is a wonderful good Incarner, eſpecially in the moſt tender Conſtitutions: But he ſays, that it is much better for ſeveral Purpoſes, eſpecially in Wounds of the Head and Tendons, to uſe in it Oil of Turpentine, inſtead of the common Oil.

Unguentum Basilicon flavum. See Basilicon.

Unguentum Basilicon minus, *ſeu* Tetrapharmacum. See Basilicon.

Unguentum Coeruleum.

The blue Ointment.

Take of live Quickſilver, one Pound; of *Venice* Turpentine, ſix Ounces: Mix them together, in a Mortar, till the Globules of Mercury diſappear; and then add to it four Pounds of Hogs Lard made warm, ſo as to make them together into an Ointment.

Unguentum de Calce. See Calx.

Unguentum Citrinum.

The yellow Ointment.

Take one Ounce of Quickſilver, and diſſolve it in as much Spirit of Nitre as will ſerve for that Purpoſe: Then add, by Degrees, a Pound of melted Hogs Lard; and mix them into an Ointment.

For the Purpoſes of a Detergent, this ſeems to be a fine Contrivance. *Edinburgh Diſpenſatory.*

Unguentum detergens.

A detergent Ointment.

Take of yellow Reſin, of Sheeps and Hogs Fat, of each one Pound; of yellow Wax, and Powder of Olibanum, of each one Pound and an half; Gum Euphorbium, and Powder of Verdegriſe, of each two Ounces; of *Straſburg* Turpentine, three Ounces: Let the Fats, Reſin, and Wax, be melted together, and ſtrained; then to them ſift in the Olibanum, Euphorbium, and Verdegriſe, in Powder: And, laſtly, put in the Turpentine; and, when the Veſſel is taken off the Fire, keep ſtirring, till the Whole is cold.

Unguentum Dialthææ. See Althæa.

Unguentum Dialthææ compositum. See Althæa.

Unguentum Diapompholygos. See Cadmia.

Unguentum Digitalis. See Digitalis.

Unguentum e Gummi Elemi. See Elemi Gummi.

Unguentum Emolliens.

The emollient Ointment.

Take of freſh Butter waſhed in Roſe-water, ſix Ounces; of Oil of ſweet Almonds, four Ounces; Oils of Chamomile and Violets, of each three Ounces; of Ducks and Hens Fat, of each two Ounces; of Orrice-root, two Drams; of Saffron, half a Dram: When the Orrice and Saffron are powdered, and the reſt melted together, make them into an Ointment.

Unguentum Enulatum. See Helenium.

Unguentum Enulatum cum Mercurio. See Helenium.

Unguentum Fuscum.

The brown Ointment.

Take of Colcothar, and the Phlegm of Vitriol, of each one Ounce; of Vinegar, one Ounce and an half; of the Flowers of Verdegriſe, five Drams; of deſpumated Honey, three Ounces: And make into an Ointment.

Unguentum Liliorum.

Ointment of Lilies.

Take of the Oil of white Lilies, ſix Ounces; of the Oils of Dill and Chamomile, of each two Ounces; of the Oil of ſweet Almonds, one Ounce; of Ducks and Hens Fat, of each two Ounces; and of yellow Wax, three Ounces: And melt them all together into an Ointment.

It ſeems calculated for the ſame Intention as the *Unguentum de Althæa*, to ſoften and diſcuſs Tumours.

Unguentum Linariæ. See Linaria.

Unguentum Martiatum. See Martiatum Unguentum.

Unguentum Mastichinum.

The Maſtich Ointment.

Take of the Oils of Maſtich, Wormwood, and Spikenard, of each two Ounces; of the Powders of Maſtich, Mint, red Roſes, red Coral, Cloves, Cinnamon, Aloes-wood, and Camels Hay, of each one Dram; and of Wax, a ſufficient Quantity to make it into an Ointment.

Unguentum Mercuriale seu Neapolitanum.

The Mercurial or Neapolitan Ointment.

Take of Quickſilver, one Pound; of *Venice* Turpentine, and liquid Storax, each two Ounces: Grind them together in a Mortar, till the Globules of Mercury are no longer viſible; then add thereto three Pounds of melted Hogs Lard, and four Ounces of Oil of Bays: Mix all together into an Ointment, according to the Rules of Art.

The liquid Storax is here added with Judgment, both as it promotes the entire Diſſolution of the mercurial Globules, by its Viſcoſity, and gives the Whole a grateful Scent. *Edinburgh Diſpenſatory.*

Unguentum de Minio Camphoratum.

Camphorated Ointment of red Lead.

Take of Oil of Roſes, one Pound and an half; of red Lead, three Ounces; of Litharge, two Ounces; of Ceruſs, one Ounce and an half; of Tutty, three Drams; of Camphire, two Drams; of Wax, one Ounce and an half: Make them into an Ointment with a leaden Mortar and Peſtle, the Wax being firſt melted with a gentle Fire; and the reſt being added in fine Powder.

Unguentum de Mucilaginibus.

The mucilage Ointment.

Take of the Oils of white Lilies, Orrice, Violets, and Chamomile, of each ſix Ounces; of the Mucilage of Linſeed, Quince-ſeeds, Fenugreek ſeed, and Marſhmallow-roots, of each four Ounces; of Ducks and Hens Fat, of each five Ounces; of white Wax, one Pint: Mix, and make into an Ointment.

Unguentum Nervinum.

Nerve Ointment.

Take of Cowſlip-leaves, with their Flowers, of Sage, Ground Pine, Roſemary, Lavender, Bays with the Berries, Chamomile, Rue, Smallage, Melilot with its Flowers, and

and of Wormwood, of each one Handful; of Mint, Betony, Penyroyal, Parſley, the leſſer Centory, and St. John's-wort, of each half an Handful; of Sheep's or Neat's-foot Oil, five Pounds; of Mutton or Beef-ſuet, or the Marrow of both, two Pounds; Oil of Spike, half an Ounce: Bruiſe them, and boil together with the Oils and Suets, till they become an Ointment.

This is much like the *Martiatum*, but the warmer of the two; and it is in Eſteem enough to keep its Place in the Shops, and be ſometimes preſcribed.

Unguentum e Nicotiana seu Peto.

Ointment of Tobacco.

Take of the depurated Juice of Tobacco, of freſh Hogs Lard, diligently waſhed, of each one Pound: And boil them together, to the Conſumption of the Juice; then add, of Turpentine, four Ounces; and of round Birthwort, in Powder, two Ounces: And make them into an Ointment.

This is originally taken from a Diſpenſatory of *Laurentius Jobertus*. Its firſt Preſcriber gives it an extraordinary Character for diſſipating ſcrophulous Tumours, and healing green Wounds; but the modern Practice directs it principally in cutaneous Foulneſſes; tho' it is ſo uncleanly a Medicine, at beſt, as to be offenſive to nice Perſons.

Unguentum Nutritum.

An Ointment by Mixture.

Take of Litharge of Gold, in fine Powder, half a Pound; of White-wine Vinegar, five Ounces; of Oil of Roſes, one Pound: Let the Litharge be ſtirred about in a Mortar, by Turns pouring in Oil and Vinegar, in little Parcels, until the Vinegar ceaſes to be viſible, and the whole becomes a white Ointment.

It is very drying, and even, in keeping, will grow ſo brittle, as to want freſh Oil to make it fit for Uſe; but it is not greatly in Uſe.

Unguentum Ophthalmicum.

Ointment for the Eyes.

Take of Tutty and Calamine, of each ſix Drams; of calcined Lead, and Camphire, of each two Drams; of Myrrh, Sarcocolla, Aloes, and white Vitriol, of each one Dram: Make them all into a fine Powder. Then take of freſh Butter, twelve Ounces; of white Wax, two Ounces; and when theſe are melted together, by Degrees ſhake in the forementioned Powders, and ſtir all together, till the Whole is cold, and become an Ointment.

Unguentum ex Oxylapatho.

Ointment of ſharp-pointed Dock.

Take of ſharp-pointed Dock-root, boiled in Water, and ſtrained thro' a Sieve, and live Sulphur, of each one Ounce and an half; of Hogs Lard, boiled in the Juice of Scabious, to the Conſumption of all the Juice, half a Pound; of the *Unguentum Populneum*, boiled in the Juice of Elecampane, half an Ounce; ſome Drops of Oil of *Rhodium* Wood: And let them all be reduced, in a Mortar, into an Ointment.

It is deſigned for the Itch, and cutaneous Diſtempers, but is ſo troubleſome to make, and ſo uncleanly, at beſt, that it is ſeldom uſed, or made.

Unguentum Pectorale.

Pectoral Ointment.

Take of the Ointment of Marſhmallows, two Ounces; of *Sperma Ceti*, half an Ounce; of Oil of Mace, obtained by Expreſſion, two Drams; of the diſtilled Oils of Aniſeed and Roſemary, each half a Dram; of the Oil of ſweet Almonds, one Ounce: Melt the Ointment of Marſhmallows, the *Sperma Ceti*, and the Oil of Almonds, together; then, having removed them from the Fire, put in the diſtilled Oils, and the Oil of Mace, ſo as to make an Ointment.

There is nothing in the Compoſition of this Ointment that forbids its internal Uſe as a good balſamic or pectoral Medicine, provided the Oil of Mucilages be carefully made for the Ointment of Marſhmallows contained therein; however, its Title denotes it deſigned for external Application; and, indeed, by being rubbed warm upon the Cheſt, it cannot but be of conſiderable Efficacy, in ſome Diſeaſes of that Part. *Edinburgh Diſpenſatory.*

Unguentum e Plumbo.

Ointment with Lead.

Take of the Oil of Roſes, ſix Ounces; of calcined Lead, and Litharge, of each ten Drams; of Turpentine, one Ounce; of Ceruſe, and Antimony, of each half an Ounce; of white Wax, two Ounces: Make them into an Ointment, by mixing them together in a leaden Mortar.

Unguentum Pomatum. See Pomatum Unguentum.

Unguentum Populneum. See Populus.

Unguentum e Resina.

Ointment of Reſin.

Take of the fineſt Pine-tree Reſin, of Turpentine, yellow Wax waſhed, and fine Oil, each equal Parts: Let the Wax and Refin be melted in the Oil, and then the Turpentine added to them, ſo that they may all have a Boil over the Fire together, and be ſtrained, *S. A.*

Unguentum Rosatum.

Ointment of Roſes.

Take of Hogs Lard, cleared from all its Membranes, and well waſhed, one Pound; and add to it one Pound of freſh red Roſes; which ſuffer to ſtand together for ſeven Days; then boil them over a gentle Fire, and preſs out the Lard; afterwards macerate again with freſh Roſes, for the ſame Space of Time, and boil and ſtrain as before: Laſtly, put to it ſix Ounces of the Juice of red Roſes; of Oil of Sweet Almonds, two Ounces; and boil over a ſlow Fire, to a Conſumption of all the Juice: Then ſtrain it again, that it may become an Ointment, *S. A.*

Unguentum rubrum desiccativum.

Red drying Ointment.

Take of common Oil, two Pounds; of yellow Wax, twelve Ounces; of *Armenian* Bole, and the Caput Mortuum of Vitriol, of each ſix Ounces; of Calamine levigated, four Ounces; of Litharge, and Ceruſs, of each ſix Ounces and an half; of Camphire, half an Ounce; and boil over a gentle Fire to the Conſiſtence of an Ointment.

Unguentum Sambucinum. See Sambucus.

Unguentum Saturninum, *vulgo* Balsamum Universale.

Ointment of Lead, commonly called the Univerſal Balſam.

Take of Litharge of Gold, and red Lead, of each one Pound; of Vinegar, four Pints; and boil them together till one half of the Liquor is waſted; then ſtrain off the other; to the Remainder add the ſame Quantity of Vinegar, and proceed to boil and ſtrain as before, till the Operation ſhall have been performed ſix ſeveral times. Then mix all the Parcels of ſtrained Liquor together, in a glazed Earthen Veſſel, and exhale them to the Conſiſtence of an Extract. Take of this Extract, and of white Wax, each three Ounces; of Oil-olive, a Pound; and mix them together, according to the Rules of Art, ſo as to make an Ointment.

As Vinegar is ſo good a Solvent for Lead and Litharge, it may be worth the Pains to prepare the Extract, for this Ointment, in the manner here deſcribed: It is, without Diſpute, a much better way, than uſing calcined Lead and crude Litharge; and this, if it had no other Advantage, would give it the Preference, as an Healer and a Dryer, to the Unguentum e Plumbo, uſually aſcribed to *Foeſius*, and above deſcribed. *Edinburgh Diſpenſatory.*

Unguentum Splanchnicum.

An Ointment for the Bowels.

Take of the Bark of Caper-root, ſix Drams; of Bryony-root, *Florentine* Orrice, Powder of ſweet Fennel-ſeed, and

and Ammoniacum diſſolved in Vinegar, of each half an Ounce; of the Tops of Wormwood, and Chamomile-flowers, of each one Dram; of the Ointment of Bays, one Ounce and an half: Let thoſe things be powdered which require it, and ſifted, and the reſt mixed therewith in a warm Mortar, ſo as to make an Ointment, *S. A.*

UNGUENTUM TUTIÆ. See CADMIA.

UNGUENTUM VERMIFUGUM.

Ointment againſt the Worms.

Take of the Leaves of Female Southernwood, common Wormwood, Rue, Savine, and Tanſey, each two Ounces: Bruiſe and boil them with a Pound and an half of Oil-olive, and a Pound of Hogs Lard, till the aqueous Moiſture is conſumed; then ſtrain and preſs out all that will run; to which add of the Gall of an Ox, and of Succotrine Aloes, each one Ounce and an half; of Colocynth, and Wormſeed, of each one Ounce: Boil them all together, keeping them continually ſtirring, ſo as to make an Ointment. But obſerve, that the Aloes, the Colocynth, and the Wormſeed, are reduced to very fine Powder.

Here we have an Inſtance of a Compoſition, where the Ingredients, though numerous, conſpire to the ſame Intention, and ſeem to uphold each others Virtues; there is nothing improper, or indiſcreetly admitted in the Whole; ſo that it cannot well fail of anſwering its End, as an external Application in the Caſe of Worms. *Edinburgh Diſpenſatory.*

UNGUES. The Nails.

The Nails are looked upon by ſome as Productions of the cutaneous Papillæ; and by others, as a Continuation of the Epidermis. This laſt Opinion agrees with Experiments made by Maceration, by means of which the Epidermis may be ſeparated entire from the Hands and Feet, like a Glove or Sock.

In this Experiment we ſee the Nails part from the Papillæ, and go along with the Epidermis, to which they remain united like a kind of Appendix; and yet their Subſtance and Structure appears to be very different from that of the Epidermis.

Their Subſtance is like that of Horn, and they are compoſed of ſeveral Planes of longitudinal Fibres ſoldered together. Theſe Strata end at the Extremity of each Finger, and are all nearly of an equal Thickneſs, but of different Lengths.

The external Plane or Stratum is the longeſt, and the reſt decreaſe gradually, the innermoſt being the ſhorteſt; ſo that the Nail increaſes in Thickneſs from its Union with the Epidermis where it is thinneſt, to the End of the Finger where it is thickeſt.

The graduated Extremities or Roots of all the Fibres of which theſe Planes conſiſt, are hollowed for the Reception of the ſame Number of very ſmall oblique Papillæ, which are Continuations of the true Skin, which, having reached to the Root of the Nail, forms a ſemilunar Fold, in which that Root is lodged.

After this ſemilunar Fold, the Skin is continued on the whole inner Surface of the Nail. This Fold of the Skin is accompanied by the Epidermis, to the Root of the Nail exteriorly, to which it adheres very cloſely.

Three Parts are generally diſtinguiſhed in the Nail, the Root, Body, and Extremity. The Root is white, and in Form of a Crescent; and the greateſt Part of it is hid under the ſemilunar Fold.

The Creſcent and the Fold lie in contrary Directions to each other. The Body of the Nail is naturally arched, tranſparent, and appears of the Colour of the cutaneous Papillæ which lie under it. The Extremity of the Nail does not adhere to any thing, and ſtill continues to grow as often as it is cut.

The principal Uſe of the Nails is to ſtrengthen the Ends of the Fingers and Toes, and to hinder them from being inverted towards the convex Side of the Hand or Foot, when we handle or preſs upon any thing hard. For in the Hand, the ſtrongeſt and moſt frequent Impreſſions are made on the Side of the Palm, and in the Foot, on the Sole; and therefore the Nails ſerve rather for Buttreſſes than for Shields. *Winſlow's Anatomy.* See POLLEX.

UNGUIS, is, alſo, the Name of a Diſorder of the Eye, called *Pterygion.* See OCULUS.

UNGUIS ODORATUS. Offic. *Onyx.* Dioſcorid. THE SWEET HOOF.

It is unknown in our Shops, which ſubſtitute in its ſtead, the *Blatta Byzantina*; as we have demonſtrated from the Obſervations of the learned *Martin Lyſter*, under that Article. *Dale.* See BLATTA BYZANTINA.

It is, alſo, a Name for the BLATTA BYZANTINA.

UNGUIS, in Botany, is the white and inferior Part of the Leaves of Roſes, and ſome other Flowers.

UNGUICULI. The ſame as ALABASTRA.

UNGULA CABALLINA, is the TUSSILAGO. Colts-foot.

UNGULA OCULI is a Pterygion, a Diſorder of the Eye. See OCULUS.

UNICORNU, MONOCEROS. Offic. Park. Theat. 1611. *Monocerus.* Raii Ichth. 42. Ejuſd. Synop. Piſc. 11. *Monoceros, Unicornu marinum.* Charlt. Piſc. 47. *Cetus marinus Narwal dictus.* Mont. Exot. 6. *Balæna decimum ſextum genus dicitur Nahwal.* Schonef. Icht. 28. THE UNICORN.

It is taken in the *Davis's* Straits; and the Part in Uſe is the very large, white, round, ſtriated, turned Tooth, growing out on the Left Side of the upper Jaw, almoſt in the ſame manner as that of an Elephant; but that on the Right Side ſoon falls off. It is diſtinguiſhed from Ivory by the Fineneſs of its Fibres: It is, alſo, generally more ſolid and ponderous; in other reſpects it reſembles Ivory.

As to the Virtues, it is ſudorific, alexipharmic, and cordial, whence it is commended againſt Poiſons, contagious Diſeaſes, and the like; it is, alſo, thought effectual in the Epilepſy of Infants. *Schroder. Andreas Baccius* has written a whole Book of the Unicorn, in which he directs Fragments of it to be ſet in Rings, and worn upon the Fingers, or hung about the Neck inſtead of an Amulet, ſo as to touch the Skin. It has the ſame Virtues as Hartſhorn, Ivory, and the like Suſtances.

The Fragments of Horns, which are ſold under the Name of *Unicorn's Horn*, are no other, as we are aſſured by *Paulus Ammannus*, than Bones of the Whale, Sea-horſe, or Teeth of the Elephant, which, as *Cardan* ſays, may be made, by artificial Means, to reſemble this Horn. *Dale.*

UNICORNU FOSSILE. Offic. Geoff. Prælect. 73. Schrod. 359. *Cornu foſſile.* Worm. 54. Charlt. 23. *Cornu foſſile, vulgo Monocerotis Cornu.* Boet. 425. *Ceratitis.* Aldrov. Muſ. Metall. 630. Geſn. Lap. Fig. 154. *Ebur foſſile.* Cluſ. Exot. 68. *Lapis Arabicus.* Cæſalp. 611. *Turqueſia.* Ind. Med. 47. *Dens Elephanti petrefactus, aliis, Lithoræarga, alba.* THE UNICORN-STONE.

The foſſile Unicorn, or *Lapis Ceratites* of *Geſner*, is a ſtony Subſtance, reſembling in Colour, Smoothneſs, and Shape, the Horns, Teeth, and Bones of Animals. It is made up of an outer, hard Part, of an yellowiſh, blackiſh, or Aſh-colour, and a ſoft, friable, compact medullary Part, without Pores, of an aſtringent and drying Quality, ſticking very cloſe to the Tongue, and ſometimes of an agreeable Smell.

It is often dug up in the Form of Bones turned to Stone, among which we often find the *Dentes Molares*, and *Inciſorii*; and we can perfectly diſtinguiſh between the Root of theſe Teeth, and that Part which appears without the Gums. Sometimes we meet with Fragments of the Radius and Tibia, repreſenting the natural Conformation of theſe Bones in a very perfect manner. There are, likewiſe, dug up large Branches, and Trunks of Trees, in which the Species of Wood is ſtill diſtinguiſhable. There is, therefore, no room left to doubt, but that theſe ſtony Subſtances are really Petrifications of the Horns, Teeth, and Bones of Animals, or of Wood; which being putrefied, by remaining long under Ground, and, in a manner, calcined, their Subſtance becomes more rare and porous, as we ſee daily in rotten and worm-eaten Wood. By the Afflux of a fine Marl diſſolved in Water, theſe porous Subſtances are filled, and the Water inſenſibly evaporating, the Remainder incorporates with the Bones, or Pieces of Wood, into a ſtony Subſtance, of the ſame Form and Figure with what they were before. But if theſe earthy Parts, which concrete with them, be of the cryſtalline or flinty Kinds, then they turn to a Subſtance like Cryſtal or Flint, as we ſee in ſeveral Sorts of foſſil Shells.

The foſſile Unicorn is found in many Places of *Germany*; and at *Mont Martyr*, near *Paris*, there were lately found many Bones hid in a ſtony Subſtance. The *Germans* eſteem it for its aſtringent, alexipharmic Qualities, and as a Provoker of Sweat, and accordingly, often uſe it in Diarrhœas, Dyſenteries, Hæmorrhages, the *Fluor Albus*, malignant and peſtilential Fevers, and in the Epilepſy. The Doſe is from ten Grains to a Dram. But they do not uſe all Kinds of it indifferently, but chooſe that which has a pleaſant Smell, and which has been previouſly tried upon Dogs, or other Animals, becauſe it ſometimes contains a poiſonous Quality, eſpecially when dug out of the Earth, mixed with Arſenic; and therefore great Care is required about it. *Groſſroy.*

It agrees in Virtues with the *Terra Lemnia*, and is recommended againſt malignant Diſtempers; it reſembles, alſo, Unicorn's Horn, particularly in reſiſting Poiſon, and curing the convulſive Motions of Infants; and is often uſed in the Small Pox and Meaſles. Of this Subſtance calcined, is prepared the factitious Turquoiſe. *Dale.*

UNIFOLIUM. A Name for the *Smilax*; *unifolia*; *humillima.*

UNIO. A Pearl. See MARGARITÆ.

UNNI CHILENSIUM de Lact. *Hiſpanis Murtilla.* The Name of an *Indian* Tree, which bears a Fruit in Cluſters, about the Size of Peas, of a ſweetiſh, and at the ſame time, ſomewhat acrid Taſte. The Natives expreſs a clear Liquor from it, which reſembles Wine; and of this Juice they make a ſort of Vinegar.

UNQUASI. Quickſilver. *Rulandus.*

VOARCHADUMIA. A kind of *Cabbala*, or Ænigmatic Art, relative to Metals, which propoſes the Exaltation of Gold by Cementations, and other Methods, in which the *Hebrew* Letters, of ſome occult and myſterious Virtues, are employ'd. The Curious may ſee an Account of this in the *Theatrum Chymicum*, *Vol.* 2. *p.* 500.

VOCIFERATIO. Vociferation. See ANAPHONESIS.

VOLA. The Hollow of the Hand, or Palm.

VOLANS. Mercury. *Dornæus.*

VOLATICA. The ſame as *Lichen.* See LEPRA. A ſort of wandering Pain, attended with a Tumor, and affecting ſometimes one Part, ſometimes another, is called by *Hannemannus* in the *Act. Haffnienſ. Volatica Scorbutica.*

VOLATILIS. Volatile. In Chymiſtry, thoſe Subſtances are called *Volatile*, which riſe, and fly off, upon the Application of Heat, or Fire; as thoſe which endure the Fire without Diſſipation, are called *fixed.*

VOLEMA. The Name of a certain Species of very large Pear. *Virg. Georg.*

VOLSELLA, λαβὶς, is the ſame as FORCEPS, [ſee the Articles FORCEPS and ACANTHABOLUS] is a chirurgical Inſtrument, contrived for taking hold of any thing, according to the Etymology of the *Greek* λαβὶς [*Labis*], uſed by *Hippocrates*, *Lib. de Sterilib.* and *Galen*, *de C. M. S. L. Lib.* 3. *Cap.* 3. and derived from λαμβάνω [*lambano*] to apprehend, or lay hold of. Its principal Uſes are in removing Plaiſters and Lint from Wounds and Ulcers, and in extracting Splinters, and other things of that Kind; as, alſo, in taking hold of various things, in which reſpect it is very uſeful in Anatomical Diſſections. It is commonly made of Steel, but ſometimes, for Brightneſs and Curioſity, of Silver. *Tab.* XXII. *Fig.* E, repreſents the *Volſella*, or *Forceps*, which is denticulated, or furniſhed with Teeth, by which means it is enabled to hold a thing the faſter.

VOLVA, in *Scribonius Largus*, No. 104. is the middle Part, or Core of the Apple containing the Kernels, preſcribed by him, among other things, for a Weakneſs of the Stomach rendering it incapable of retaining the Food.

VOLUBILIS, *a volvendo*, from twiſting, or twining, according to *Blancard*, is a Name for the SMILAX.

VOLUNTARIUS, κατὰ προαίρεσιν, ἑκούσιος, voluntary, ſpontaneous, is applied to any thing which is in our own Power to have it done or not done. In this Senſe *Motion*, *Tears*, and other Actions, are ſaid to be voluntary. *Caſtellus.*

VOLUNTAS, θέλημα, according to Dr. *Willis*, *de Anima Brutorum*, is an Attendant of the rational Soul, proceeding from the Underſtanding, and a kind of rational Appetite, in the ſame manner as the ſenſitive Appetite is connected with the Imagination, and is the procuring Hand of the corporeal Soul. *Caſtellus.*

VOLUPTAS, ἡδονὴ, Pleaſure, is the ultimate Perception of the ſenſitive Soul, in which all other Affections acquieſce; and, conſiſts, according to Dr. *Willis*, who has attempted to deſcribe it, in the Treatiſe juſt before quoted, in a grateful and elegant Alteration, Expanſion, Agitation, and Motion of the Spirits, occaſioned by ſenſible Objects. *Caſtellus.*

VOLVULUS, in *Pathology*, is the ſame with ILEOS, which ſee. In *Botany* it is a Name for the *Convolvulus*; *Linariæ Folia*; *aſſurgens.*

VOMER, ὖς, ὖος, in Anatomy, according to the Deſcription given it by *Cheſelden*, is ſeated between the Bones of the Palate, and the ſphenoidal Bone, being, alſo, joined to the Proceſs of the Ethmoides, and Part of the lower Jaw, and having its fore Part, which is ſpongy, continued to the middle Cartilage of the Noſe, and making in Conjunction with it, the *Septum Naſi.* See a fuller Deſcription of this Bone under the Article CAPUT.

VOMICA is commonly taken for a ſuppurated Impoſtume, or an Abſceſs with a Suppuration. *Caſtellus.*

Vomica Pulmonum is a latent Diſeaſe of the Lungs, which often deceives under a Shew of Health. What goes by this Name is a ſmall Abſceſs ſeated in ſome Part of the Lungs, and ſtraitly incloſed within a Bag, or Membrane. This Diſorder is moſt incident to thoſe who are affected with a Tabes, or labour under an Anaſtomoſis, or Rupture of a Vein in the Lungs. In this Diſeaſe, the Breath ſmells ill long before the *Vomica* breaks, ſometimes Blood comes up with Coughing, the Body is perpetually dull and heavy, and the Cough very long and troubleſome, and ſometimes followed with an Expectoration of the *Vomica*; in which Caſe the Patient is ſeized with no ſmall Fever, ſucceeded by bloody Spit, and vaſt Perturbation of Body; the Conſequence of which Circumſtance may poſſibly be a Recovery to a good State of Health. It has often happened, that the *Vomica*, by a ſudden Rupture, has diſcharged itſelf into the Heart, and occaſioned ſudden and unexpected Death. *Lommii Obſ. Med.*

Vomici, in ſome Authors, are ſuch as are affected with a *Vomica Pulmonum*; and *Johnſon Lexic. Chym.* calls Quickſilver *Vomica Liquoris æterni*, "the *Vomica* of the eternal Liquor."

VOMILIUM, ſuppoſed to be from *Vomo*, to vomit, is a Name beſtowed by *Libavius*, *S. A. Chym. Lib.* 6. *Cap.* 19, 20. on *Mercurius Vitæ*, and *durum Vitæ*, on account of their Effects. It is extended, alſo, to other Emetics; ſo that *Vomilia*, in the Jargon of the Chymiſts, may be ſuppoſed to be the ſame with *Vomitoria.*

VOMITIO, Vomition, or the Act of Vomiting.

VOMITORIA, VOMITIVA, ἐμετικὰ. Vomitories, Emetics.

Vomitory Medicines, or Emetics, are indicated,

1. From the Foulneſs of the Mouth in the Morning, from its Bitterneſs, from Eructations, Nauſea, a gnawing Pain of the Stomach, with a gradual Decay of the Appetite, neither excited nor attended by a Fever.

2. From ſpontaneous *Vomiting*, together with great Facility in the Action.

3. From the Nature of the Matter, as it is known to be moveable or immoveable.

4. From the Situation of the Place affected with a Repletion or Obſtruction below the Diaphragm, and eſpecially if that Affection be primary, and nothing contraindicates.

5. From the general or epidemic Nature of the Diſeaſe.

6. From the Conſtitution of the Year.

Emetics are forbidden by the Contraries to the fore-mentioned Indications.

The Body is prepared for taking a *Vomit* with the more Eaſe and Safety,

1. By rendering the Matter moveable by Dilution, Attenuation, and Diſſolution.

2. By relaxing and lubricating the Paſſages with mollifying, oleous, and gentle Medicines.

3. By premiſing Phlebotomy, if the Body be plethoric, or exceſſively robuſt, and, at the ſame time, very ſtrongly agitated.

Vomiting is excited,

1. By irritating the Spirits by preſenting ſome very nauſeous Idea, or by ſome unaccuſtomed Agitation, as on the Sea, or otherwiſe.

2. By irritating the Fibres of the Fauces and Pharynx with a Feather dipt in Oil, or ſomething like it.

3. By ſwallowing large Draughts of freſh warm Water, with Oil, Honey, Sugar, and the like.

4. By every thing highly acrimonious, and at the ſame time viſcid; by the Flower and Seed of Dill; by the Leaves of Aſarabacca; and by the Root and Seed of *Atriplex*; or by more violent Simples, as the Cataputia, Eſula, the Root of Cyclamen, the Flower, Juice and Bark of the Ebulus, or Dwarf-elder; the Flowers, Seeds, and Root of Broom; both the Hellebores, the Seeds of Naſturtium, Ricinus, Thymelæa, and Cnicus; the Roots of Bryony, Iris, and Tithymalus; the Herbs Gratiola, and Tobacco.

5. By Antimonials, as the Crocus, Glaſs, Flowers, or Regulus of Antimony, in Subſtance, Infuſion, Rob, Syrup, emetic Wine, the Mercurius Vitæ, Emetic Tartar, and the like, which produce various Effects according to the different Degrees of Violence.

6. By Mercury rendered acrimonious by Acids, in which, alſo, great Variety may be obſerved, in proportion as the Acid more copiouſly and openly, or more ſparingly and covertly, adheres to the Mercury.

The Choice, Doſe, Form, with the proper Time for adminiſtering Emetics, are indicated by the Age, Sex, Temperament, Seaſon of the Year, the Nature of the Diſeaſe, and of the Matter to be evacuated.

Vomiting is promoted by copious Draughts of mild, aqueous, honeyed, and warm Liquor, taken after every Paroxyſm of Vomiting, and the ſame, after being diſcharged, again repeated.

Vomiting is repreſſed by ſwallowing ſome ſmooth Oil, by Opiates, Aromatics, grateful Acids, and Corroboratives, either taken inwardly, or outwardly apply'd. *Boerhaav. Inſtitut. Medic.*

VOMITUS. A Vomiting. See PYRETOS.

Vomiting and a *Nauſea*, ſeem to be retrograde ſpaſmodic Motions of the muſcular Fibres of the Oeſophagus, Stomach, and Inteſtines, attended with ſtrong Convulſions of the Muſcles of the Abdomen and Diaphragm; which, when gentle, create a

Nauſea; when violent, a *Vomiting*. Theſe convulſive Diſorders proceed from the immoderate Quantity, or Acrimony of the Food; from Poiſons; from ſome Injury of the Brain, as a Wound, Contuſion, Compreſſion, or Inflammation of that Part; from an Inflammation of the Diaphragm, Stomach, Inteſtines, Spleen, Liver, Kidneys, Pancreas, or Meſentery; from an Irritation of the Gula; from a diſorderly Motion of the Spirits by unaccuſtomed Agitations in a Coach, Ship, or otherwiſe; or from the Idea of ſomething nauſeous. *Boerhaav. Inſtitut. Medic.*

There is ſcarce any Accident, in human Life, which occurs more frequently than *Vomiting*; for there is no Perſon but vomits at one time or other; and there are very few Diſeaſes which are not attended with this troubleſome Symptom. Now *Vomiting* is no other than a preternatural Inverſion of the periſtaltic Motion of the *Oeſophagus*, Stomach, and eſpecially the *Duodenum*, to the Degree of a convulſive Contraction, by which the Contents of the Stomach, accompanied ſometimes with thoſe of the *Duodenum*, are diſcharged by the Mouth.

The Affection itſelf is too manifeſt, to require a Deſcription by diagnoſtic Signs; but the Symptoms which attend it are to be regarded with Care and Attention, and the rather, as the Cauſes of *Vomiting* are various, to a great Degree. In general, we may obſerve, that ſome Perſons are very eaſy to vomit, and diſpoſed to that Action on the leaſt Occaſion; others, on the contrary, are with great Difficulty provoked to it, and find it no leſs troubleſome, with much Striving, and after many vain Efforts, to diſcharge their Stomachs this way. The firſt of theſe Perſons are called, by a technical Term, *Eucmeti* [εὐέμετοι, from εὖ, importing Facility, and ἐμέω, to vomit]; and ſuch are Children in compariſon of Adults; Women, if compared with Men; and, among Men, they who are of a lax Habit of Body: They, on the contrary, who are of a cloſe, well-ſet Habit of Body, ſhort-necked, and of a robuſt Syſtem of Nerves, are termed *Dyſemeti* [δυσέμετοι, from δύς, importing Difficulty, and ἐμέω, to vomit].

The antecedent and concomitant Symptoms of *Vomiting* are uſually a very troubleſome Nauſea, with a Tenſion and Weight in the epigaſtric Region, a Bitterneſs in the Mouth, Heat, a gnawing Pain, and Loſs of Appetite, with a great Anxiety of the *Præcordia*, and Reſtleſſneſs. Much Spittle diſtils into the Mouth, and is evacuated by Spitting, and the Patient is, beſides, affected with a Vertigo, Dimneſs of Sight, Heavineſs of Head, Redneſs of Face, Trembling of the under Lip, and moſt of all with a Cardialgia, till, at length, after much laborious and fruitleſs Eructation, he diſcharges the Contents of his Stomach. All theſe Symptoms plainly enough indicate a ſpaſtic and convulſive Subverſion of the Stomach and adjacent nervous Parts.

The Matter diſcharged by *Vomiting* is what gives the ſeveral Denominations to that Affection: A mucous, chylous Diſcharge of Reliques of Foods not perfectly diſſolved, is called a *pituitous Vomiting*; a Congeſtion of bilious Matters evacuated this Way conſtitutes what we call a *bilious Vomiting*; other Denominations, as thoſe of *blackiſh*, *corrupt*, *green*, *æruginous*, and *porraceous*, are taken from Accidents owing to a Mixture of other Humours, and particularly ſuch as are acid, or corroding. Sometimes Worms and Inſects are thrown up by *Vomiting*; and ſometimes a ſtercoraceous Matter from the very Bottom of the Inteſtines, is, by an Inverſion of the periſtaltic Motion, diſcharged the ſame Way. At other Times Pus and a ſanious Matter are evacuated; and I myſelf once obſerved a fleſhy and membranous Maſs, like a Polypus, which was generated in the Stomach, expelled by *Vomiting*. Frequently there is a Diſcharge of pure Blood, and in ſuch a Caſe the *Vomiting* is denominated *ſanguineous*; ſometimes the Blood is black and corrupted, which conſtitutes what we call the *Morbus niger*, or *black Diſeaſe* of *Hippocrates*.

The proximate Seat of the Matter diſcharged by *Vomiting* is the Stomach, by whoſe preternatural Motion with that of the adjacent Parts the ſame is expelled; but the more remote Parts, as the Liver, Pancreas, by means of their Ducts, the Spleen, the Maſs of Blood and Humours, and the Habit of the Body, as it happens in Tumours, by means of the Veſſels and Glands, have their Contents attracted the ſame Way. The Cauſes which irritate the ſenſible and nervous Subſtance of the Stomach to a ſyſtaltic and compreſſory Motion are to be ſought not only in itſelf, but in the adjacent and remote nervous Parts, ſince we may, on ſome Occaſions, obſerve, that *Vomiting* is excited by Conſent of Parts in a Multitude of ſpaſmodic Affections: And this Obſervation is of ſo great Moment, that for its better Illuſtration, we cannot but think it very proper to premiſe an exact Deſcription of the Fabric of the Stomach and *Duodenum*, according to the Diſcoveries of the neweſt and moſt approved Anatomiſts.

The firſt Parts, then, which here offer themſelves to our Sight, are, the *Coats* of the Stomach, which has four aſcribed to it. The outermoſt is *membranaceous*, and takes its Riſe from the *Peritonæum*, and is continued to the Coat which ſurrounds the Concavity of the Diaphragm; the ſecond Coat is *muſcular*, and conſiſts of a double Series of Fibres, of which the external is conſtituted of longitudinal Fibres, which ſerve in contracting the Length of the Stomach; the internal Series of Fibres conſiſt partly of ſuch as extend themſelves from the *Cardia*, or the Mouth of the Stomach, to the *Pylorus*, and cauſe an Approach of both Orifices to one another; and partly of circular ones, which are diſpoſed over the Breadth of the Stomach, and are inſtrumental in its Contraction: The third Coat, which is ſubjacent to the former, has the Denomination of *nervous*, and is furniſhed with tendinous Fibres, which are extended obliquely over the Stomach; this Coat is larger than the former, on which Account it is rugous, and provided with a Multitude of Glands: The fourth is called the *villous Coat*, and is compoſed of nervous *Papillæ*, and Ends of Veſſels erected like *Villi*, or coarſe Hairs, and lined with a Mucus, derived from the forementioned Glands; but between the outer Coat, and the muſcular as well as between this and the nervous Coat, and between this laſt and the villous Coat, there is a triple cellulous Subſtance, containing very numerous Blood-veſſels.

The next Parts which deſerve our Conſideration, are the *Veſſels* of the Stomach: Theſe are two *gaſtric Arteries*, the *right*, and the *left*, and *coronary Artery*: For the *Aorta Inferior*, after entering the Abdomen thro' a Perforation near the Spine, immediately ſends forth the *Arteria Cœliaca*, which is divided into three Branches, the firſt of which is the *hepatic*, whence ariſe the *Arteria Pylorica*, *Gaſtrica dextra*, and *Duodena*. Another Branch is, the *Coronary*, whoſe Ramifications extended over the Stomach are innumerable; and the third Branch is the *ſplenic*, which taking its Courſe to the Spleen, ſends forth firſt the *pancreatic Artery*; ſecondly, the *left Gaſtric*; thirdly, the *epiploic Artery*; and, fourthly, the *Vaſa Brevia*, one of which is *venous*: By this Connection of Arteries it appears, that the Conſent of the Humours, in their Circulation thro' the Parts before-mentioned is very conſiderable. The *Veins* are, the *coronary*, the *right* and *left Gaſtric*, and one of the *Vaſa Brevia*; theſe all ariſe from the *Vena Porta*, whoſe Trunk, taking its Courſe under the *Duodenum* to the *Pancreas*, ſends forth, in the firſt Place, the *Venæ Cyſticæ*, *Pyloricæ*, and *Duodenales*; after this, ſends off three, and ſometimes but two Branches: One of them, which is the *ſplenic*, is ſubdivided into the *coronary*, *left Gaſtric*, *pancreatic*, *epiploic*, and the venous Portion of the *Vaſa Brevia*; another Branch, the *greater Meſeraic*, ſupplies the *inteſtinal* and *gaſtro-epiploic* Veins; and the third Branch, the *internal hæmorrhoidal*, produces the *right gaſtric* and the *duodenal* Veins. Hence it appears, that an Interruption of the Circulation of the Blood in one of the *Viſcera* is ſucceeded by a Regurgitation to ſome other; the Veins are accompanied by lymphatic Veſſels, as the Arteries are by Nerves; theſe Nerves proceed partly from the *Par Vagum*, and partly from the intercoſtal Branch; the *Par Vagum*, deſcending in two Branches on both Sides of the *Oeſophagus*, diſtributes innumerable Ramifications over the whole Stomach, and afterwards concurs in forming the Plexuſes of the intercoſtal Nerve: This latter, after perforating the Diaphragm, forms, near the Cœliac Artery, ſemilunar *Ganglia*; whence ariſe, on the right, the *Plexus Hepaticus*, and *Renalis major*; and, on the left, the *Plexus Lienaris*, *Stomachicus*, and *Renalis Sinifter*. From the *Plexus Hepaticus* and *Renalis dexter*, with the ſemilunar Ganglion, ariſes the *Plexus Meſentericus Superior*, by whoſe Intervention the five Plexuſes, before-mentioned, on both Sides are ſo united, that the Parts which are ſupplied from them with Nerves, are mutually related to one another by the ſtricteſt Conſent.

In the next Place, the Structure of the *Duodenum* highly deſerves our Contemplation: This Part, with reſpect to its Coats, Nerves, and Veſſels, agrees with the Stomach, and, beginning at the *Pylorus*, forms three Flexures; the firſt Flexure, tending from the Stomach obliquely downwards is at the ſame time reflected backwards, and has inſerted into it, near its End, the common biliary Duct, which conveys the Bile and pancreatic Juice; after this, when it approaches the right Kidney, it forms another Flexure, where it reſts upon the Pancreas; and, laſtly, near the Spine, in its Approach to the left Kidney, it makes a third Flexure, over which the Artery and the *Plexus Meſentericus Superior* have both their Courſe; the Conſtriction of which immediately affects the *Duodenum*; the Capacity of this Inteſtine far exceeds that of the others, contrary to the common Opinion, which makes it leſs.

Theſe two Parts, the *Stomach*, and the *Duodenum*, which may juſtly be called a *leſſer Stomach*, are not only connected with one another in a very remarkable manner, but with other nerveo-membranous Parts; as, firſt, with the *Oeſophagus*, by a Communion of the ſame common Coats; and hence they communicate, alſo, with the Coat which ſurrounds the Fauces and the Mouth. Secondly, they have a Connection with the whole

inteſtinal Duct, or Tube, not only by the Communication of the ſame Coats, but, more eſpecially, by means of the *Plexus Meſentericus Major*, from which all the Inteſtines are ſupplied with Nerves. And, thirdly, they have a ſtrict Relation to the *Omentum*, which is very firmly connected to the anterior Part of the Stomach. Fourthly, they have a Connection with the Diaphragm by Branches from the *Par Vagum*, and intercoſtal Nerve; and, alſo, by a Coat which is common to the exterior Superficies of both the Stomach and the Diaphragm; and, by means hereof, fifthly, with the nervous and membranous Parts of the Breaſt, and with the Muſcles of the Abdomen. Sixthly, they have a Correſpondence with the biliferous Ducts, not only by the *Ductus Cholidochus*, which is inſerted into the *Duodenum*, but principally by the *Plexus Hepaticus*, which ſupplies the *Duodenum* and Stomach with Nerves, and communicates with the *Plexus Stomachicus*, by the Intervention of the *Meſentericus Superior*. Seventhly, they communicate with the Pancreas, which firmly adheres to the *Duodenum*. Eighthly, with the Kidneys, by the right and left *Plexus Renalis*, which is connected with the *Plexus Stomachicus*. And, laſtly, with the Head and Brain; as, alſo, with the Heart, by the Branch of the *Par Vagum*, which is common to them both.

By virtue of the muſcular Coat, and its Fibres above-mentioned, which are common to the *Oeſophagus*, Stomach, and all the Inteſtines, there is excited a vermicular kind of Motion, which is peculiar to thoſe Parts, and has the Name of periſtaltic: This Motion conſiſts in an alternate Conſtriction and Relaxation of the ſaid Parts, and tends from the upper Parts downwards. In the Stomach, by contracting and ſtraitening it, after different manners, and dilating it again, with the conſtant Aſſiſtance of the Motion of the Diaphragm and Muſcles in Reſpiration, it promotes the Digeſtion of the Aliments, and their Expulſion thro' the *Pylorus*. In the Inteſtines it is the means of an Abſorption of the laudable Humours by the lacteal or chyliferous Veſſels, and of the Protruſion of the excrementitious Parts to the lower Region, and their Elimination by the *Anus*.

Whenever this periſtaltic Motion, which directs its Force downwards, is perverted into a Motion of the preternatural, ſpaſmodic, and convulſive Kind, there ariſe Gripes of the Inteſtines, cardialgic Pains about the *Pylorus*, Spaſms, as they are called, of the Stomach, Colics, and Fluxes of the Belly: But if this ſame Motion, beſides its ſpaſmodic Contraction, be, alſo, inverted, and tends upwards, it firſt of all forces up the Contents of the Inteſtines into the Stomach, or if they are there already, impels and protrudes them upwards, whence *Vomiting* is excited, in which Action the *Pylorus*, together with the *Duodenum*, connected to it, and the lower and anterior Part of the Stomach, thro' a violent Contraction of the longitudinal and circular Fibres, are contracted to the upper Orifice, to which the Contents are by this means applied, and the continued Force of the Spaſm ſtill preſſing behind, are from thence forced into the *Oeſophagus*, and, the ſame inverted Motion being propagated thro' the whole *Oeſophagus*, conveyed to the Mouth, and ſo diſcharged. This Motion is aſſiſted by a violent Conſtriction of the Diaphragm and abdominal Muſcles, cauſed by Conſent, and by a Compreſſion of the Sides of the Stomach, thence occaſioned. Hence it is obſerved, that, after each Act of *Vomiting*, the Difficulty of Reſpiration ſtill continues, and the Region of the Abdomen is more or leſs affected with Pain; and, that in Animals diſſected immediately after the Exhibition of an Emetic, a Compreſſion of the Stomach by the Diaphragm and *Muſculi Recti* of the Abdomen, is evidently viſible; whence ſome *Engliſh* Phyſicians are of Opinion, that the Fibres of the Stomach contribute nothing at all to the Action of *Vomiting*.

The weaker the Fibres of the Stomach, and the more copious and moveable the Matter to be diſcharged, the eaſier is the *Vomiting*; but if the Fibres be conſiderably robuſt, as in thoſe who vomit with Difficulty, or the Cauſe of the *Vomiting* conſiſts in a tenacious, viſcid Humour firmly adhering to the Folds of the Stomach, or an acrimonious cauſtic Matter infeſting the Nerves, the Action of *Vomiting* is rendered difficult, and attended with formidable Symptoms: The Action in ſuch a Circumſtance is preceded by a very ſevere Cardialgia, vaſt Nauſea, Anxieties, and Perturbation of the Præcordia, laborious and fruitleſs Eructations, troubleſome Concuſſions of the Abdomen, its Contents, and eſpecially of the Diaphragm; whence proceed ſingultuous Agitations; a plain Evidence that the Stomach labours under a great Convulſion, which is inſufficient to expel the noxious Matter. It very frequently happens at ſuch a time, that the Convulſion is propagated to the bilious Ducts, which occaſions an Effuſion of Bile into the *Duodenum* and Stomach, and, being diſcharged by Eructation, the *Vomiting* is not in the leaſt abated: The ſame Motion is communicated to the *Oeſophagus*, and expreſſes the Lymph from its Glands, and thoſe of the Fauces, much of which is diſcharged by Spitting. Moreover, from a Compreſſion of the Blood-veſſels of the Stomach, and the adjacent Parts, by the violent Concuſſions, the Blood is impelled in great Quantities to the ſuperior Parts, and the Head, and cauſes an Infarction of the Veſſels, a Diſtention of the nervous Membranes, and a Diſpoſition to the like Spaſms; Hence proceed Redneſs of the Eyes, Pains in the Head, Dimneſs of Sight, Vertigo, Trembling of the under Lip, and ſometimes convulſive and epileptic Commotions of the whole nervous Syſtem.

The proximate Cauſe which diſpoſes to *Vomiting*, is a Vellication or Stimulation of the nervous Fibres of the Stomach and *Duodenum*: Now the vellicating Matter reſides either in the Parts themſelves, or in others remote, but connected with them by means of the Nerves: Hence ariſes a Diſtinction of *Vomiting* into *ſymptomatic* and *idiopathic*; the material Cauſe of the latter is in the Stomach itſelf, or at leaſt in the *Duodenum*; the other has its Cauſe more remote, reſiding in the lower Inteſtines, the bilious Ducts, Kidneys, Head, or ſome other diſtant Part, and depends chiefly on Conſent of Parts, by which the irregular Motions are communicated. It is evident, therefore, that there is no ſuch thing as a monarchical Power, which *Helmont* aſcribes to his Regent of the *Pylorus*, from which, he thinks, the Origin of the Conſtriction and inverted Motion is always to be derived. For tho' it ſometimes begins at the *Pylorus*, yet the Principle of the Conſtriction is frequently reſident in the loweſt Inteſtines, as appears by the ſtercoraceous *Vomitings*.

Among the material Cauſes of *Vomiting*, which have their Seat in the Stomach itſelf, the firſt which deſerves Notice is, the exceſſive Quantity of Things ingeſted, which, by oppreſſing the Fibres of the Stomach, and diſtending them beyond the Sphere of their Elaſticity, and by that means occaſioning a more than ordinary Afflux of the nervous Fluid and the Blood, excites them to convulſive Motions, in order to expel the noxious Matter: Hence the Subjects moſt obnoxious to *Vomiting* are, 1. Exceſſive Drinkers, on account of the immoderate Quantity of Liquors ingeſted. 2. Tender Infants, from ſucking too much Milk, or a premature Reception of more ſolid Food; in which latter Caſe, *Kerkringius*, not without Reaſon, imputes the Cauſe to the Straitneſs of the *Pylorus*, not as yet capable of tranſmitting ſolid Aliments. 3. Perſons weakened by Diſeaſes, and faſting under them; in which Circumſtance, a moderate Allowance of Food, eſpecially of the ſolid Kinds, may provoke *Vomiting*. 4. Voracious Children, who are much ſubject to Hickups and *Vomiting*.

Another Cauſe of *Vomiting* is the vitiated Matter collected in the Stomach, which is frequently the Reliques of crude Meats, and ſuch as are difficult of Digeſtion, ſalt Meats, ſuch as are hardened in the Smoak, and the like improper Foods, which are hard to be concocted. Hence are excited *Vomitings* of a pituitous Kind, which are incident, 1. To Perſons of a weak Stomach, but voracious Appetite. 2. To thoſe who, being accuſtomed to ſofter Kinds of Food, enter upon a more ſolid and groſs Diet. Hence, alſo, 3. They who indulge themſelves in plentiful Feeding, much Sleep, and a lazy Kind of Life, are, alſo, much ſubject to *Vomiting*. The ſame vitiated Matter, or foul Sordes, by long Reſidence, becomes acid, and by an Acceſſion of Bile from the *Duodenum*, procured by a Fit of Anger, or, perhaps, ſome other Cauſe, is rendered more acrimonious; whence ariſe, from the Stomach, bilious *Vomitings*.

All bilious *Vomitings*, eſpecially if they are chronical, or periodical, have their *Fomes* in the *Duodenum*. This Inteſtine is very well accommodated for the Entertainment of the vitiated Sordes, on account of its Flexures, and becauſe of an Affuſion of Bile to the chylous Juice which happens in the ſame. If this Bile becomes inert and unactive, or ſtagnates on account of the languiſhing Tone of the Inteſtines, and is not duly mixed with the Aliments, or has its Subſtance more and more corrupted by an Acceſſion of acid Humours, it is rendered acrimonious, and in a manner cauſtic; whence, by vellicating, it excites bilious, green, æruginous, and even black *Vomitings*: For Bile, by a ſtrong Acid, is rendered green; and after it has ſtood for a conſiderable time, it becomes of a black Colour; hence the Matter diſcharged by *Vomiting* is often acid to a high Degree, ſo as to ſet the Teeth on Edge, and corrode the very Stones of a Pavement, and ſilver Veſſels. Such was the Matter of the *Vomiting* obſerved by *Henricus ab Heer*, Obſ. 29. which had the Taſte of Vitriol: And I myſelf, in my Notes on *Poterius*, *Cent.* 2. Caſ. 93. have related a Caſe where the Matter thus diſcharged was corroſive like *Aqua fortis*; and mixed with Filings of Steel, became true Vitriol.

Perſons ſubject to *Vomitings* which have their Origin in the *Duodenum*, are, 1. *Hypochondriac* and *melancholic* Patients, who, on account of the languid Tone of the Inteſtines, are much moleſted with acid and viſcid Crudities, from the Remains of the Food in the *Stomach* and *Duodenum*. To this it muſt be added, that the Bile is unactive to ſuch a Degree, that inſtead of a generous Chyle, there is produced nothing but a copious Collection of acrid and acid Humours mixed with a corrupted Bile, by

by long Reſidence become black, and communicating the ſame Colour to the Humours, which, for that Reaſon, the Antients imagined to proceed from the Spleen. Theſe Humours are conſtantly vellicating the *Duodenum* and *Pylorus*, Parts quick of Senſation, whence the Stomach is eaſily ſubverted, eſpecially ſince theſe Parts are of themſelves ſubject to an Inverſion of the periſtaltic Motion. 2. The *ſcorbutic* are no leſs liable to this Affection, from the Thickneſs and Impurity of the whole Maſs of Humours; as are, alſo, 3. The *cachectic*, whoſe Bile is vapid, and inſufficient for the perfect Diſſolution of the Aliments; whence their Vomit is more of the bilio-viſcid Kind. 4. Infants are much ſubject to theſe *Vomitings*, from their ſucking impure Milk, rendered acid by the angry and fretful Temper of the Nurſe, which frequently is the Occaſion of porraceous, æruginous, and green Diſcharges of this Kind. And, laſtly, Perſons labouring under a Quartan are moleſted with theſe *Vomitings*, proceeding from the *Duodenum*.

Vomiting is, alſo, excited by the noxious and offenſive Qualities of the Things received into the Stomach. Thus Aliments too fat, Fruits, and fermentible Subſtances, undergoing a more acrid Fermentation, excite *Vomiting*, eſpecially if the Stomach be already oppreſſed with bilious Humours. The ſame is effected by Food which is ungrateful, and taken with a Loathing; and the more, if it be of an oily and pinguious Subſtance. Under this Head muſt be reduced acrimonious Things, and ſuch as are endued with a ſubtil cauſtic Principle, as are all Emetics, and poiſonous Subſtances; particularly the Eggs of the Barbel-fiſh, for which ſee *Timæus à Guldenklee*, *Lib.* 3. *Cap.* 7. and poiſonous Muſhrooms, mentioned by *Hildanus*, *Cent.* 4. Obſ. 34. As for Poiſons themſelves ſuch as Arſenic and Sublimate, it is very well known, that by their highly-cauſtic Principle, they excite not only *Vomiting*, but very terrible convulſive Symptoms in the whole Syſtem of the Body, which are the Effects, alſo, of the more acrimonious Emetics and Cathartics.

A ſubtil, acrimonious Humour, infeſting the nervous Parts of the Stomach, is, alſo, a Cauſe of very troubleſome *Vomitings*. Sometimes this Humour is by a *Metaſtaſis* transferred to the Stomach from the Matter of the Gout, *Eryſipelas*, *Scabies*, Ulcers, and Purples, to the Stomach. An Inſtance of *Vomiting* excited from the premature Conſolidation of an Ulcer, we find in *J. Rhodius*, *Cent.* 2. Obſ. 65. For the ſame Reaſon it happens, that the Small Pox, Meaſles, and malignant and exanthematous Fevers, are attended with moſt violent *Vomitings*: For the acrid and cauſtic *Miaſma* of thoſe Diſeaſes, by infeſting and irritating the nervous Fibres of the Stomach, produces this Diſorder. From the ſame Cauſe muſt we account for thoſe dreadful *Vomitings* in the Peſtilence, where, upon diſſecting a Carcaſe, *Helmont*, as he aſſures us, in his *Tumul. Peſtis*, found the Stomach excoriated over with an *Eſchar*. And *Diemerbroeck*, *de Peſte*, *Lib.* 4. *Hiſt.* 13. tells us, that he ſaw the ſame Part affected with a Carbuncle.

A Congeſtion of the vital Blood in too great a Quantity in the Veſſels of the Stomach, and by that means diſtending them to an immoderate Degree, is another uſual Cauſe of *Vomiting*. Hence, 1. Women with Child, in the firſt Months after Conception, are affected with it, from a Regurgitation of the Blood, cauſed by a Retention of the Menſes, to the ſuperior Parts, which ceaſes when the Fœtus arrives at a conſiderable Bulk, in ſome Subjects after the fourth Month. We have a remarkable Inſtance to this Purpoſe in *P. Latichius*, *Lib.* 5. Obſ. 7. 2. Women who have no menſtrual Flux are, for the ſame Reaſon, moleſted with *Vomiting*. Thus *Paaw olus*, *Sect.* 1. Obſ. 22. relates the Caſe of a Girl from whom the Menſes never flowed, who for ſeven whole Years as ſoon as ſhe took any Food, vomited it up again; but, after her Menſes began to flow, was freed from that Diſorder. 3. Men are ſubject to the ſame Diſtemper from a Suppreſſion of the Hæmorrhoids, which occaſions a Reflux of the Blood, in too great Quantities, to the *Vena Portæ*, and by that means a Congeſtion of the Blood as aforeſaid, whence *Vomiting* is frequently excited.

A preternatural Conſtitution or Diſpoſition of the Stomach itſelf is a ſufficient Cauſe of *Vomiting*. For, firſt, if the upper Orifice be cloſed up by a Spaſm, or any other preternatural Cauſe, it excites this Affection, which, however, cannot properly be called *Vomiting*, but is rather to be eſteemed a Spaſm of the lower Part of the *Oeſophagus*; ſince the Food, before it arrives at the Stomach, is thrown up again, together with a Mucus contained in the *Oeſophagus*. Examples to this Purpoſe may be found in *Willis's Pharmacop. rat. Part.* 1. *Sect.* 2. *Cap.* 1. *Forestus*, *Lib.* 6. *Pathol. Cap.* 1. and *Coiterus*, *Obſerv. Chirurg.* p. 121. where you have an Inſtance of the *Cardia*, or upper Mouth of the Stomach, cloſed up with a *Scirrhus*, and hard Tubercle.

The Caſe is otherwiſe with the *Pylorus*, from whoſe preternatural Conſtitution and Obſtruction Occaſion is given for chronical and perpetual *Vomitings*; ſo that it may be taken for a Rule, that whoever is for a long time together moleſted with *Vomiting*, eſpecially after Meat, and at the ſame time pines and waſtes away in his Body, he has his *Pylorus* ill conſtituted. We have an Inſtance of that Part hardened and incruſtated to ſuch a Degree, as to be incapable of tranſmitting Food, in *Sanchez*, Obſ. 1. p. 376. of a ſcirrhous *Pylorus* in *Salmuth. Obſ.* 20. *Cent.* 1. *Willis's Pharmac. rat. p.* 1. *Sect.* 2. *Cap.* 1. and in *A. Med. Berol. Dec.* 2. *Vol.* 3. of a blackiſh and corroded *Pylorus* in *Meibom. Diſſ. de Vomit. Sect.* 31. and of a *Pylorus* obſtructed by a Piece of Money ſwallowed, in *Kerkringius*, *Spic. Anat.* Obſ. 1. in which Caſes the Patients were moleſted with *Vomiting* as long as they lived.

A ſymptomatic *Vomiting* proceeds from the Irritation of the *Oeſophagus* or Inteſtines: Hence it happens, that from the Intruſion of a Feather, or the Finger, into the Fauces, and a Titillation of the Beginning of the *Oeſophagus* by the ſame, the Stomach is immediately ſubverted, or irritated to Vomition, eſpecially if it be oppreſſed with a Load of Humours. And that the Beginning of an Inverſion of the periſtaltic Motion frequently commences from the lower Inteſtines, and is propagated, by Conſent of Parts to the Stomach, we are aſſured by thoſe *Vomitings* which owe their Riſe to the Colic, *Gripes*, and the like Diſorders, in which Caſes vaſt Quantities of Humours, of various Colours and Conſiſtencies, are often diſcharged. See *Hildanus*, *Cent.* 4. Obſ. 32, 35. And *Marcellus Donatus*, *Lib.* 4. *Cap.* 3. affirms, that twenty Pounds of Serdes have been, for ſeveral Days together, diſcharged by *Vomiting*. I have myſelf obſerved in old Perſons afflicted with an Hernia, where the Falling down of the Inteſtines has been very conſiderable, an extraordinary and ſurpriſing Diſcharge of a feculent Matter by vomiting every third or fourth Day, for ſeveral Years together.

Vomitings are occaſioned by ſome Diſorder in the Inteſtines, in the following Caſes: 1. From their Diſtention by Wind and Fæces, an Example of which we have in *Dodonæus*, *Obſ. Med.* 37. 2. From an obſtinate ſpaſmodic Colic, as we are aſſured by Experience. 3. From a ſtubborn Obſtipation of the Belly; as it happens in that wandering ſpaſmodic Diſorder in which Clyſters, after Injection, are diſcharged together with the Fæces, by the Mouth. 4. From the Iliac Paſſion, and Hernias. 5. From a Dyſentery, according to *Platerus*, Obſ. p. 875. 6. From Worms corroding the Stomach and Inteſtines. See *Amatus Luſitanus*, *Cent.* 1. *Cur.* 5. *Cent.* 3. *Cur.* 20. I knew a Girl, ſeven Years of Age, who, having laboured under a violent Cardialgia, Convulſions, and continual *Vomitings*, at length diſcharged a large Worm by the Mouth, and ſoon after died. In theſe Caſes there is very often a total Inverſion of the periſtaltic Motion, which beginning from the *Inteſtinum Rectum*, aſcends even to the Fauces, and conveying all the Contents of the Inteſtines to the ſuperior Parts, expels them by the Mouth.

There may be, alſo, a ſevere *Vomiting* excited by Conſent of Parts from a Diſorder of the biliferous Ducts in the Liver: For as theſe Ducts are endued with the ſame conſtrictive and dilatatory Motion as the Inteſtines, ſo their preternatural Conſtriction or immoderate Laxneſs provokes to *Vomiting*. In the former Caſe there is not only a violent Expreſſion of the Bile into the *Ductum*, and from thence into the Stomach, in a retrograde way, vellicating its Coats, and exciting to vomit; but the very Spaſm of the above-mentioned Ducts is, by Conſent of the *Plexus Hepaticus* and *Stomachicus*, propagated to the Stomach. In the latter Circumſtance there is too great an Effuſion of the Bile thro' the relaxed Tubes into the *Duodenum*.

Cauſes of bilious *Vomitings* are, 1. Emetics, and ſtrong Cathartics, which excite Spaſms in the Stomach and biliferous Ducts, whence there is an Effuſion of Bile into the *Duodenum*. 2. A great Fit of Anger, eſpecially when the Subject is eating; and, in ſuch a Circumſtance, the Paſſion of the angry Mother may have a pernicious Effect upon the Child who ſucks her Milk. 3. A tertian Fever, on account of the Spaſms of the *Primæ Viæ*; in which Caſe bilious *Vomitings* are of Service. 4. The *Cholera Morbus*, and bilious Fevers. 5. Hypochondriacal Diſorders, in which the *Primæ Viæ* are affected with Spaſms. 6. The laſt Cauſe I ſhall mention is, Stones in the Gall-bladder, or bilious Concretions, by which Spaſms are excited which produce bilious *Vomitings*. Remarkable Inſtances of this are to be found in the *Ad. N. C. Ann.* 6. *Dec.* 1. Obſ. 20. and *Sculet. Armament.* Obſ. 61.

Nothing is more common than for Perſons under nephritic and calculous Diſorders to be affected with a Nauſea, *Vomiting*, and Gripes, eſpecially if a Stone happens to ſtick in thoſe ſenſible Parts the Ureters, or even in the Kidneys. Obſervations to this Purpoſe occur in *Bonetus*, *Sepulchr.* Obſ. 60. and I remember a celebrated Phyſician, and Botaniſt, of this Place [*Hall*], ſixty Years old, who from a Stone which ſtuck very faſt in the middle of his left Ureter, laboured under continual *Vomitings*, and Loathings of all Food, for three Months

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together, which, at length, induced a Decay of Strength, and Wasting of the Body, terminating in Death. Some Weeks before his Decease, he complained of the corrupt and fetid Taste and Smell of the Matter discharged, imagining it to be mixed with the urinous Secretions, which passed off but in small Quantities. It very frequently also happens, that nephritic Paroxysms after long ceasing, are renewed and re-excited by Spasms of the Stomach and Intestines. The Reason is obvious, for as the left Kidney, by its nervous *Plexus*, thro' the Intervention of the *Mesentericus Superior*, coheres with the *Plexus Stomachicus*; and the right Kidney, by means of the like *Plexus*, is immediately connected with the *Plexus Hepaticus* and *Stomachicus*; and besides as the *Duodenum* is connected with the *Involucra* of this Kidney, hence it easily appears why Spasms of either Kidney, but the Right more than the Left, should excite *Vomiting*, often of the bilious Kind, and so violent, as hardly to be exceeded by Emetics. We have a remarkable Instance, to this Purpose, in *Meibomius*, *Dissert. de Vomitu*, *Sect.* 27. where Stones impacted in the Kidneys first excited terrible *Vomitings*, and, when these ceased, so violent a Spasm of the *Oesophagus* was excited, that something, as it were, seemed to leap out of the Mouth.

Vomiting, also, may, by Consent of Parts, attend Affections of the Head, as *Hippocrates* long ago observed, 6 *Aph.* 50. "A Wound of the Brain, he says, is necessarily succeeded by "a Fever, and bilious *Vomitings*." And we read the same in the *Coacæ Prænotiones*; and every Surgeon knows, that Inflammations, or considerable Wounds and Contusions of the Head and Brain, and its Membranes, are succeeded by *Vomiting*. And the same Consequence happens from violent Spasms of the nervous Parts of the Head, as in that severe Pain of the Head called *Clavus Hystericus*, an obstinate Cephalalgia, Hemicrania, Vertigo, spasmodic Apoplexy, and the like Disorders; in all which Cases a *Vomiting* is occasioned thro' that Consent which the Stomach, by means of the *Par Vagum* of Nerves, holds with the Brain; not to mention, that the Connection of the *Par Vagum* with the fifth Pair of Nerves, is the Cause of *Vomiting* under difficult Dentition.

A Depression of the Ensiform Cartilage, by compressing and irritating the Stomach, may be reckoned among the external Causes of *Vomiting*. Examples to this Purpose we have in *Barbette*, *Anat. Lib.* 1. *Cap.* 4. and *Decker Prax. Barbett*, p. 126. For this Reason Maids who much straiten and compress their Præcordia with stiff Boddice, are subject to *Vomiting*. To external Causes, also, is to be referred, an imaginatory *Vomiting* excited from the Perception of ungrateful Objects, by Sight, or even by Hearing; and, also, that *Vomiting* which is provoked by a whirling Motion of the Body, or Jactation in a Ship, to Subjects unaccustomed to it.

There is, also, a critical Kind of *Vomiting*, when the material Cause which produces it is eliminated by the very Vomition, which is therefore very salutary, and is sometimes to be observed in angry Persons, and Cachectics of a choleric Disposition; and, also, in Fevers, both acute and intermittent, and principally about the critical Days: For, by means of this Action, the Stomach, *Duodenum*, the biliary Vessels of the Liver, the Pancreas, with the intestinal Tube and Glands, are purged, and deterged from those Collections of vitious Juices and Humours which otherwise might enter the Mass of Blood, and create various Disorders, which, upon their Expulsion by *Vomitings*, are not to be apprehended. Of such salutary *Vomiting*, *Celsus* excellently remarks, *Lib.* 1. *Cap.* 3. "that it is beneficial to "all bilious and full Persons, who have either injured themselves by Repletion, or have bad Digestions. For if more be "received than can be concocted, we ought not to run the "Hazard of its being corrupted; or if it be already corrupted, "there is nothing more commodious than to expel it, by the "quickest and most ready Passage. Whenever, therefore, we "are molested with bitter Eructations, attended with Pains, "and Oppression of the Præcordia, let us have immediate Re"course to *Vomiting*."

The Diagnosis of the different Causes of *Vomiting* is formed upon the Evidence of concurring Signs. Pituitous *Vomitings*, attended with a pressive Pain about the Region of the Stomach, are an Indication of Crudities adhering to the *Primæ Viæ*. Bilious, chronical, and periodical *Vomitings*, signify too great a Laxness of the biliferous Ducts; chronical *Vomitings*, particularly, of many Years Duration, in which the Food is thrown up half-concocted, indicate some Injury or *Scirrhus* of one of the Viscera. That *Vomiting* has its Rise from the Stone, we infer, from a Pain in the Region of the Loins, attended with a Diminution of the urinary Evacuations, and with sandy Excretions. Paleness of Countenance, and Pains and gnawing Sensations in the Intestines, attended with frequent Spitting and Itching of the Nostrils give a Suspicion of Worms: But Judgment is necessary in these Cases, to explore, from the various concurrent Symptoms which attend *Vomiting*, the true Cause of that Affection, without the Discovery of which we can expect but a palliative Cure.

By way of Prognosis, all critical Vomitings are salutary, symptomatical ones bad, and worst of all when excited by a subtile caustic Acrimony vellicating the Nerves. All Vomiting more violent than ordinary, is not free from Danger; for it may cause Abortion, excite an Hernia, and dispose to a Retropulsion of the arthritic, podagric, and erysipelatous Matter upon the nobler Parts, to the no small Detriment of the Patient. It has occasioned a Rupture of the Omentum, as we read *Act. Med. Berol. Dec.* 2. *Vol.* 3. and a Laceration of the very Stomach, as we are told by *Sanchez*, *Ob. pract.* p. 376. Bilious Vomitings, especially the green, porraceous, and æruginous, terrify us with Appearance of Danger, and threaten an Inflammation. Vomiting from Worms corroding the Stomach is generally pernicious; and if a dead Worm be discharged, and at the same time there be a Cessation of very severe Symptoms, and terrible Convulsions of the Limbs, all at once, it is a mortal Indication of a supervening *Sphacelus*, which destroys the Worms, together with the Patient. All fetid Vomitings are of bad Prognostication, as they indicate an internal Corruption. Sebaceous or Tallow-like Vomitings indicate a Redundance of corrosive acid Humours in the Stomach, by which the pinguious Substances are coagulated, and an intolerable burning Heat and Cephalalgia are usually excited.

Where there is a plentiful Discharge of a gross Humour tinged with a brown Colour like Gall, to the Quantity of Half a Pint, or a Pint, whether spontaneous, or procured by Art, as it frequently happens in slow Fevers, it is a certain Indication, that the Tone of the Intestine next the Stomach is very much decayed.

Constant Vomitings, for the Space of Half a Year together, or more, and attended with a slow Heat, and an Extenuation of the Body, give strong Suspicion of an ulcerated Stomach. I met with an Instance of this Nature when I practised Physic at *Minden* in *Westphalia*, fifty Years ago, and had a View of it in the Dissection of a dead Body.

The Method of Cure.

Critical Vomitings, by which Humours of various Kinds are plentifully discharged, being salutary, scarce require any Cure, but are rather, on some Occasions, to be promoted. But symptomatical Vomitings, which are less sufficient or accommodated for removing the Cause, are the more carefully to be treated, in order to their Cure: And the two principal curative Indications, or Intentions, to be answered, are, in the first Place, to quiet and compose the convulsive and unruly Motion of the Stomach; and, afterwards, to oppose and subdue the material Causes of the Disorder.

The first Intention is answered by Antispasmodics, Corroboratives, and Anodynes, beginning with gentle, and proceeding to stronger Remedies of those Kinds. Of this Nature are, Saffron, and Castor in the Form of Powders, Essences, or Extracts; *Theriaca Cœlestis*, incorporated with Powder of Amber, and Absorbents, as Hartshorn, Crabs-eyes, and red Coral: Powders composed of these Ingredients, with spirituous and vinous Waters, such as the Waters of Lime-tree-flowers, Lilies of the Valley, Chamomile, Baum, Mint, Black Cherries, Cinnamon, and the like, are of signal Service in these Cases. Among Corroboratives are distinguished, Nutmegs, Mace, Cardamoms, Cinnamon, *Costus Verus*, Cloves, Orange and Citron-peels, the Roots of red Gentian, Calamus Aromaticus, Galangals, the Herbs Marjoram, Rosemary, and the like; with the Oils and Essences prepared of these Simples. But of all the Remedies specifically appropriated to this Disease, the *Mentha Crispa*, or curled Mint, is the most eminent and effectual; for which Reason, the Oil prepared from it may be mixed with almost all the Remedies administered in these Cases, as being an eminent Paregoric as well as Strengthener. Among Anodynes, I can affirm, that my own anodyne Liquor is as effectual as safe, especially if it be mixed with my Balsam of Life; or, if more powerful Anodynes are required, recourse may be had to the *Pilulæ de Styrace*, *Wildeganfii*, or *Sydenham's* Laudanum.

With the Administration of these internal Medicines, it may be of good Service to join the Application of Topics to the epigastric Region, in order to repress, in some measure, the Violence of the disorderly Motions. Externals proper for this Purpose are, the strengthening distilled Oils of Mint, Cloves, Nutmegs, Wormwood, Mace, Cedar, and the like, reduced with Balsam of *Peru* into an Ointment. Epithems, also, for the same Purpose, may be composed of the *Spiritus Matricalis*, *Spiritus Theriacalis*, Hungary-water, and Essence of Saffron; and Cataplasms of camphorated Spirit of Wine, Ferment of Bread, the strongest Wine-vinegar, with Balsam of *Peru*, and an Addition of some Drops of the Oils of Mace and Mint. Of no less Efficacy is a Plaister of Crums of Bread, and Balsam of *Peru*, softened with a Drop or two of some distilled Oil;

over which it will be proper to apply reſolvent and ſtrengthening Bags warm. Our Balſam of Life does excellent Service in this Caſe, the Præcordia, and epigaſtric Region being anointed therewith.

But we ſhall loſe our Pains, if we only uſe theſe Things alone, without attempting to remove the material Cauſe of the Diſorder. A Vomiting, then, of the pituitous Kind which depends on Crudities of the *Primæ Viæ*, and a viſcid Mucus ſticking in them, is beſt cured by an Emetic, eſpecially if the Vomiting is not of itſelf ſufficient to eliminate the Sordes; and if the Patient is greatly afflicted with an Effort to vomit, a Nauſea, and Cardialgia; for, in this Caſe, after the Uſe of inciding and digeſtive Medicines, ſuch as neutral Salts, the Roots of Arum, and eſpecially of Squills, we are to exhibit a gentle Emetic, ſuch as tepid Water mixed with freſh Butter, and copiouſly drank; or the Root of Ipecacuanha reduced to Powder. To Infants ſeized with a Vomiting on account of coagulated Milk, or the Meconium contained in the Stomach, it is expedient to give Oxymel of Squills mixed with Syrup of Rhubarb.

A bilious Vomiting which ariſes from a weakened Digeſtion, and has its Fomes in the *Duodenum*, after the Uſe of Abſorbents, and gently-laxative Preparations of Manna and Rhubarb, admits of a perfect Cure, by reſtoring the Strength of the Stomach and Inteſtines; which, after the Sordes are gradually removed, is excellently performed by my viſceral Elixir, uſed for a conſiderable time together with a proper Regimen, and due Exerciſe: And as this Kind of bilious Vomiting is of a chronical Nature, ſo that Species is of a more acute and hurtful Kind, which draws its Origin from violent Spaſms of the Stomach and biliary Ducts, excited by Anger. In this Caſe, it is expedient to correct the Acrimony of the Bile by diluent and acidulated Medicines; by the *Spiritus Nitri Dulcis*; by the Spirit of Vitriol; by Abſorbents, foſſil Ivory, and Crabs-eyes: The ſpaſmodic Motions are, in the mean time, to be allayed by gentle, antiſpaſmodic, and anodyne Medicines; uſing for the Sake of Evacuation Potions impregnated with Rhubarb; but where there is a Coagulation of the Bile, or a Gall-ſtone, nothing is more effectual for reſolving them, than the *Carolina* Springs, or any cold medicinal Waters, exhibited tepid. When too great a Relaxation of the biliary Veſſels proves the Cauſe of chronical Vomitings, the moſt proper and efficacious Remedies are Corroboratives; the beſt of which are, the *Peruvian* Bark; the Bark of Caſcarilla; Eſſence of Gentian; and chalybeate Tinctures, exhibited in vinous Waters.

A Vomiting which ariſes from an acrid Matter adhering to the Nerves of the Stomach, or from a Retropulſion of a Gout, arthritic Diſorders, or an Eryſipelas, beſides mild Sedatives, and Medicines which excite the Motions neceſſary to the Expulſion of the Matter, requires a recalling of the exanthematous Matter to the Surface of the Body: This End is obtained by exhibiting a diaphoretic Powder, which determines the Motion of the Blood and peccant Matter to the external Parts of the Body; and this Effect is more ſucceſsfully produced, if a ſmall Quantity of Camphire is added to the diaphoretic Powder, and Clyſters, Frictions, and Baths for the Feet, are uſed. When Poiſons or poiſonous Aliments excite a Vomiting, nothing affords more certain Relief than the immediate Exhibition of large Draughts of Milk and pinguious Liquors, by means of which the Spicula of the Poiſon are not only obtunded, but vomited up along with the Liquor drank. Hence ſome Phyſicians, in Vomitings ariſing in Plagues and malignant Fevers from a Miaſma ſtimulating the Coats of the Stomach, order the Root of Ipecacuanha to be taken in ſome warm Liquor; after which, they exhibit Acids in Conjunction with Diaphoretics. But this Practice is not to be uſed in Caſes where there is an Inflammation of the Stomach.

Acrid, acid, and bilious Sordes, falling into the Inteſtines, frequently excite a Vomiting accompanied with colical Pains; in which Caſe, we are firſt to exhibit internally diluting and demulcent Medicines, ſuch as Decoctions of Oats and Hartſhorn, Whey, or a few Spoonfuls of the Oil of ſweet Almonds. 2. Antiſpaſmodics; the beſt of which is, the anodyne mineral Liquor, mixed with a few Drops of genuine Oil of Mace, and exhibited in cold Water. The Laudanum of *Sydenham* may be, alſo, uſed for this Purpoſe; and in Patients of choleric Temperaments, rectified Spirit of Vitriol, either alone, or mixed with the anodyne Mineral Liquor, and exhibited in cold Water, is an excellent Remedy. And, 3. Mild Laxatives; the beſt of which are Clyſters joined with the internal Uſe of Preparations of Manna and Rhubarb, or the Salts obtained from medicinal Waters diſſolved. Where there are Worms in the Inteſtines, Clyſters of Milk alone are moſt expedient, exhibiting at the ſame time internally, bitter Reſolvents, or mercurial Laxatives; during the Uſe of which a ſufficient Quantity of Milk, or Oil of Sweet Almonds, is to be exhibited.

The preſervative Method is principally to be uſed, when from too great a Relaxation of the *Primæ Viæ*, Crudities are perpetually generated, and periodical Vomitings by that means produced. In this Caſe the Region of the Stomach, and of the Back about the firſt Vertebra of the Loins, with which the Stomach is connected by a certain Ligament, is to be defended from all Cold. Saline, acid, crude, and ſmoked Aliments, together with ſuch as are of hard Digeſtion, are to be carefully abſtained from. Nor muſt the Patient for ordinary Drink uſe Malt Liquors, but ſome proper Decoction in Conjunction with old generous Wine, eſpecially *Burgundy*. Exceſſive Sleep is hurtful, but moderate Exerciſe beneficial. It is, alſo, expedient for ſome time to uſe viſceral Elixirs after Meals; Chalybeate Baths, and Liquid Medicines prepared of Steel, are very beneficial. It is, alſo, of great Advantage at proper Intervals to purge with gentle Laxatives.

To attempt to ſtop a Vomiting by Aſtringents and Anodynes, before the peccant Matter is removed, is an highly prejudicial Practice; for when the ſpaſmodic Motions are allay'd, worſe Symptoms ſucceed, ſuch as exceſſive Anxieties of the Præcordia, Cardialgias, and Inquietudes. For this Reaſon, the Vomiting generally does not ceaſe by the Exhibition of Corroboratives, before the Excretion of the peccant Matter; for theſe Remedies are only to be uſed when the Motions, but not the Matter, are peccant, or when there is no Proportion between the Motion and the Matter, or when the latter is ſubtile, and in a ſmall Quantity, but the Efforts to vomit ſtrong and violent.

Hence if in Infants eſpecially and Children a Vomiting is excited by the Chin-cough, on account of the Conſent between the Stomach and Diaphragm, the Diſorder is to be allayed by ſedative and anodyne Medicines, ſuch as the Syrups of white and red Poppies, Extract of Saffron, Oil of Sweet Almonds mixed with Sperma Ceti, the Pulvis Marchionis, Amber, Cinnabar, and a Grain or two of the *Theriaca Cæleſtis*, Clyſters may, alſo, be injected, and the Breaſt and epigaſtric Region may be anointed with a Liniment prepared of green and red *May* Butter, the Fats of the Badger, Fox, and Beaver, and a little of the Oil of Henbane.

The Vomiting of pregnant Women ariſing from a Regurgitation of the Blood to the Stomach, which is, alſo, obſerved in Women afflicted with a Retention of the Menſes, and Men labouring under a Suppreſſion of the Hæmorrhoids, is moſt effectually removed by temperating Medicines, mild Laxatives, Clyſters, Corroboratives, and beſt of all by Veneſection, or a Recalling of the uſual Excretions of Blood. In Caſes of this Kind Emetics are highly prejudicial, ſince they either excite a Vomiting of Blood, or, which I have frequently ſeen, bring on an Inflammation of the Stomach.

A bilious Vomiting, accompanied with Spaſms of the Præcordia, and excited by Anger, eſpecially when the Patient is at a Meal, is to be treated with great Caution; and the principal Intention of Cure ought to be directed to the Relaxation of the Spaſms. In ſuch Caſes it is cuſtomary with many to exhibit Emetics and Purgatives; but I would adviſe theſe to be carefully abſtained from, ſince I have often ſeen violent Symptoms, and ſometimes mortal Inflammations of the Stomach brought on by this means.

When Efforts to vomit or actual Vomitings ſeize in the Morning, which frequently happens to thoſe who uſe too much ſpirituous Liquors, eſpecially over Night, then the precipitating Powders, and ſuch as involve the acid Crudities, together with Medicines which promote Digeſtion, ſuch as the Stomachic Powder of *Brickmannus*, and candy'd Citron, and Orange-peel, are the moſt efficacious Remedies.

If, as I have frequently obſerved, a chronical Vomiting at certain Intervals ariſes from long-continued Grief, I have found the moſt efficacious Relief in Analeptics, and eſpecially in the Balſam of Life mixed with an equal Portion of the anodyne Mineral Liquor, and uſed both internally and externally. Excellent Effects are, alſo, produced by the *Balſamum Embryonum*, Cinnamon-water impregnated with Quinces, and generous Wines.

When Vomiting as joined as a Symptom to febrile Paroxyſms, which frequently happens in Quotidians both of the ſimple and double Kind, it is proper, if no Circumſtance contraindicates it, to exhibit a gentle Emetic. In the Small Pox and Meaſles the Vomiting ceaſes ſpontaneouſly after the Eruption; and a Mixture prepared of diſtilled Waters, the Juice of Lemons or Citrons, and the Salt of Wormwood, is of excellent Service. Nor does this Preparation want its proper Uſe in Tertians.

A Vomiting, ariſing from the Pain of the Stone, is moſt effectually allay'd by the Anodyne Mineral Liquor, or the *Spiritus Nitri Dulcis* well prepared. Oleous Clyſters, Baths of ſweet Waters, Oil of Sweet Almonds taken internally, and Antiſpaſmodics are, alſo, proper. The Vomiting of Perſons labouring under Hernias, or the Iliac Paſſion, rarely remits till the Tumor is mollify'd and reduced.

Hippocrates,

Hippocrates in *Epid. Lib.* 6. informs us, that Vomiting is cured by Vomiting; but becauſe Contraries are cured by Contraries, ſome Phyſicians have concluded from this Paſſage of *Hippocrates*, that Similars may be cured by Similars. But this is an Error; for, if Vomiting is cured by Vomiting, the Cure is performed by Contraries; for Vomiting often proceeds from peccant Sordes, and ill concocted Juices lodged in the Stomach, which Nature endeavours ſpontaneouſly to evacuate; and when ſhe is not able to do ſo, her Force is to be aſſiſted by Art. For this Reaſon young Practitioners are to be adviſed not to abuſe this Maxim, leſt by a wrong Application of it they ſhould be led into a prepoſterous and injurious Practice; for if an acrid cauſtic Matter adhering to the Coats of the Stomach, or Blood ſtagnating in the Veſſels of the Stomach, is the Cauſe of the Vomiting, it would be a terrible Error to attempt to increaſe this Vomiting by Art.

In order to ſtop exceſſive Vomiting, Reſt, and lying in Bed, contribute conſiderably; for any Commotion of Body forthwith excites and augments the Vomiting; and this Obſervation is of ſingular Uſe in Practice.

In the Beginning of exanthematous Fevers, ſuch as the Plague, Eryſipelas, and Small Pox, Nature often attempts a Vomiting, which ought by no means to be ſtopped, or treated with Aſtringents. In Caſes of this Kind, ſuch Medicines as gently promote cuticular Excretion are proper; for when the Efflorescences begin to appear on the Surface of the Body, the Vomiting ceaſes ſpontaneouſly.

The obſtinate Vomitings of hyſteric Patients ought not to be ſuddenly ſtopped by Opiates, or Aſtringents; for by this Practice I have ſeen violent Convulſions of the Limbs, and Anxieties of the Præcordia produced; and when theſe Symptoms ceaſed, the Vomiting returned.

When frequent Vomitings afflict and weaken the Stomach, an exact Regard is to be had to the Regimen and Method of Life. It is expedient to eat frequently, though little at a time, and of ſuch Aliments as are proper, and eaſy of Digeſtion. Sweet Milk and white Bread agree with ſome, though not with all; and I can from Experience aſſert, that the drinking pure cold Spring-water contributes more to ſtrengthen the Stomach, and remove the Cuſtom of Vomiting, than any other Liquor whatſoever: Rich and aſtringent *Pontac*, and *Burgundian* Wines, are preferable to others, eſpecially *Rheniſh* Wine, which is prejudicial to hypochondriac Patients. The Juices of roaſted Fleſhes are more proper than thoſe of ſuch as are boiled.

In Diſeaſes where Nature is by a certain ſalutary Motion employ'd in propelling a peccant Humour to the Surface of the Body, which happens in arthritic and eryſipelatous Diſorders, Topics, and eſpecially Preparations of Camphire, are to be very cautiouſly applied; for I have frequently obſerved, that by camphorated Spirit of Wine, which in ſome Caſes is very uſeful, uſed by infirm Patients labouring under arthritic Pains, an Hepatitis, and ſpurious Pleuriſy, which are, alſo, Species of a Rheumatiſm, the peccant Matter has been forced back to the nervous Coats of the Stomach and Inteſtines, and excited Vomitings, Cardialgias, and Hiccups. In Caſes of this Kind, if an Attempt is imprudently made to ſtop the Vomitings by Aſtringents and Opiates, a mortal Inflammation of the Stomach is eaſily brought on in infirm Patients.

Immoderate and long-continued Vomitings of pregnant Women, which principally happen in the firſt Months of Geſtation, eſpecially in thoſe who indulge themſelves too much in Venery, and are plethoric, are by no means to be cured by ſpirituous Medicines, ſuch things as corroborate the Stomach, Aſtringents and Opiates; but are to be removed by repeated Veneſections in the Ancle, Reſt of Body, and Tranquillity of Mind; and when a Vomiting of this Kind is ſo violent as to threaten Abortion, I have ſeen it more effectually ſtopped by drinking pure cold Water, than by the Uſe of any other Medicine whatever. But when an Analeptic is requiſite, one Spoonful of Cinnamon-water taken after Meals, is ſufficient. *Fred. Hoffman.*

VOMITUS CRUENTUS. See MORBUS NIGER.

VOPISCUS. The Twin which comes to perfect Birth, while the other periſhes in the Uterus. *Caſtellus.*

VORACITAS. Voracity. See ADDEPHAGIA.

VOSACAN. A Name in *Boerhaave* for the *Corona Solis*; *Ranunculi Radice.*

UPUPA. Offic. Schrod. 5. 324. Aldrov. Ornith. 2. 704. Geſn. de Avib. 70. Schw. A. 368. Jonſ. de Avib. 85. Charlt. Exer. 98. Raii Ornith. 145. Ejuſd. Synop. A. 48. Will. Ornith. 100. Bellon. des Oyſe. 293. THE HOOPO.

It is a melancholy and very unclean Bird, living on Worms found in Dung, Caterpillers, Beetles, and the like. The Parts in Uſe are the *Fleſh* and *Feathers*. The *Fleſh*, and its Decoction, according to *Avicenna*, have a ſpecific Virtue againſt the Colic. And the *Feathers* applied, are ſaid to mitigate Pains of the Head. *Dale.*

URACHUS, οὐραχὸς, from οὖρον, Urine, and ἔχω, to have, or contain, a Ligament belonging to the Bladder, and of particular Uſe in the Fœtus. See ALLANTOIS and RENES.

URÆON, οὐραῖον, in *Galen, Com. in R. V. J. A.* is the the Extremity of a Bone, particularly the *Os Sacrum. Caſtel.*

URAGION, οὐράγιον, in *Hippocrates, Lib. de Corde*, is the the Apex, or Point of the Heart.

URAGOS, οὐραγὸς, from οὖρον, Urine, and ἄγω, to convey, in *Aetius, Tetr.* 4. *Serm.* 4. *Cap.* 3. is the ſame as *Urachus.*

URANÆ, οὐρῆναι, from οὖρον, Urine, the Ureters, by ſome ſo called. *Gorræus.*

URANION, οὐράνιον, is the Name of a Collyrium, of the Sort called *Adecta*, [ſee ADECTOS] deſcribed by *Paulus, Aetius*, and *Trallian, Lib.* 2. *Cap.* 5.

URANIOS, οὐράνιος, from οὐρανὸς, *Cœlum*, the Heavens, in *Hippocrates*, is commonly ſpoken of the Air, particularly 1 *Epid. Sect.* 3. near the Beginning.

URANISCUS, οὐρανίσκος, a Diminutive of οὐρανὸς, Heaven, is a Name for the Palate, or *Hyperoa*, on account of its being the ſuperior Part of the Mouth, and, alſo, arched in manner of the Heavens. *Caſtellus.*

URANOS, οὐρανὸς, Heaven, by *Hippocrates*, in Compliance with the vulgar Way of Speaking, is commonly uſed for the Air, which is above us as far as the Region of the Clouds. *Galen, Com.* 2. *in* 1 *Epid. T.* 4. It is, alſo, a Name for the Palate, as in *Ariſtotle, de Part. Anim. Lib.* 2. *Cap.* 17.

URANOSCOPUS. Offic. Aldrov. de Piſc. 204. Rondel. de Piſc. 1. 305. Jonſ. de Piſc. 61. Salv. de Aquat. 197. Raii Synop. Piſc. 97. *Uranoſcopus ſeu Cœli Spectator.* Charlt. de Piſc. *Callionymus vel Uranoſcopus*, ἀστροσκόπος. Oppian. THE STAR-GAZER. For a further Account of this Fiſh ſee CALLIONYMUS.

URCEOLARIS, URCEOLA. Names for the *Parietaria*, from its Uſe in ſcouring Glaſs-veſſels [*Urceoli vitrei*].

URCEUS. A Meaſure of Liquids, of various Dimenſions in different Places; in the Territory of *Pergamus*, it contained twelve or fifteen Ounces of Wine. *Caſtellus.*

UREDINES, in the alchymiſtical Cant, are the Virtues of Metals communicated to them from the Sun. *Uredo* in *Pliny, Lib.* 20. *Cap.* 18. is the Smut affecting Fruits; and is a Name given, alſo, to a burning and very ſevere Cephalalgia in a remarkable Caſe related in the *Philoſophical Tranſactions* for *June* 1668.

UREMA, οὔρημα, in *Hippocrates, Lib. de Nat. Hominis*, is the ſame as οὖρον, Urine.

URENTIA (*Medicamenta*), the ſame as *Cauſtica*, or rather, according to *Blancard*, PYROTICA.

URESIS, οὔρησις, in *Coac.* 263. is the ſame as οὖρον, Urine, but *ibid.* 348. ſignifies Miction, or the Action of urinary Excretion.

URETERES, οὐρητῆρες, from οὖρον, Urine. The Ureters. See RENES.

URETHRA. See GENERATIO.

The proper Method of opening the imperforated Urethra, or Glans.

Two Caſes uſually occur, in which the impervious Glans, or Urethra, ſhould be opened. 1. When the Glans is impervious in a new-born Infant. 2. When, in Adults, the Extremity of the Glans being imperforated, the Urine is diſcharged under it. That the Urethra is impervious in Infants, may be gathered from hence: If, for ſome Days after their Birth, we do not find the leaſt Marks of Urine in the Cloths and Swaths about them, and if they cry violently. Upon this, the Operation muſt be ſpeedily performed, leſt the Infant ſhould loſe its Life, through the Detention of too great a Quantity of Urine. But this Operation is commonly varied, according to the various Diſpoſitions of the Diſorder: For ſometimes we find ſome Mark, at leaſt, of an Urethra in the Glans, as the Paſſage of the Urine is only ſtopped by a very thin kind of Membrane. In this Caſe, therefore, the Cure may very eaſily be performed, by carefully piercing that Membrane with a pretty fine Lancet, or even with the Needle before deſcribed in couching a Cataract (*Tab.* XXXVIII. *Fig.* 5. or 6.); and, after a Diſcharge of Urine made by the Patient, by introducing into the Urethra, either a Tent faſtened to a Thread, and dipt in the Oil of ſweet Almonds, or in ſome other vulnerary Oil, or a ſmall flexible Candle, or a waxed coarſe Thread, in order to hinder it from cloſing again. If the Membrane be ſomewhat thick and fleſhy, it is better to uſe, inſtead of the Lancet, either the aforeſaid Couching-needle, or even a finer triangular-pointed Needle, commonly called a *Trocar*, like that in *Tab.* XLVII. *Fig.* 6. and to perform the reſt of the Operation in the Manner already directed. But if not the leaſt Mark of an Urethra can be perceived, then commonly the Infants are left by many Surgeons without any kind of Aſſiſtance, as incurable. Though it is better, in my

my Opinion, to make the Experiment, and to attempt, tho' in vain, ſome difficult Operation, than, by neglecting all Methods, to exchange the doubtful Hopes of Recovery for the immediate Danger of Death. Wherefore thoſe Surgeons are to be commended, who, in ſuch a Caſe, eſpecially if the adjacent Parts of the Abdomen be diſtended with Urine, duly perforate the Penis with ſome of the above-mentioned Inſtruments; and, after a Diſcharge of the Patient's Urine, ſet about the reſt of the Cure in the Manner already preſcribed.

But if this Method ſhould not prove ſucceſsful, then nothing ſeems to remain, but the Death of the Child, or piercing the Bladder above the Os Pubis, or perforating the Perinæum, in the Manner directed under that Article. But, whether this latter Method of Cure for this Diſorder in Infants has ever been tried by any Surgeon, I cannot be poſitive.

In Adults ſeveral Caſes may happen which require the Aſſiſtance of a Surgeon to open the impervious Glans: For, ſometimes, it is true, the Urethra is pervious, but yet in ſuch a manner that the Urine flows not ſo much from the Glans, as from ſome other Part of the Penis below it, and that ſometimes nearer, and ſometimes farther from it, and even in ſome Caſes from the Perinæum. Sometimes we find a Perforation in ſome other Part of the Penis and Urethra, beſides the Glans, ſo that the Urine paſſes two Ways: But almoſt always ſuch Diſorders have been contracted in the Uterus; and conſequently they are natural, as it were, to moſt of thoſe affected with them. In the mean time it cannot be denied, but that they likewiſe ariſe from an Ulcer or Wound in the Penis, or ſometimes, poſſibly, on occaſion of extracting a Stone out of the Urethra, or from the Acrimony of the Urine, which being ſtopt by a Stone lodged in the Urethra, corrodes, and makes a new Paſſage for itſelf. Such Apertures are all commonly hard to cure, yet thoſe which are largeſt and neareſt to the Bladder are worſt; and if the Aperture is very large, it can never be totally conglutinated. Thoſe Perſons whoſe Penis is perforated near the Abdomen, are to be eſteemed quite unfit for Marriage and Procreation; but the Caſe is otherwiſe with thoſe whoſe Urine flows either about the Middle of the Penis, or near the Glans; for nothing at all hinders the ſubtile Particles, or Aura of the Semen of ſuch Perſons in Coition, from paſſing into the Uterus: So that here the greateſt Care and Prudence is requiſite in thoſe Surgeons, who, in Caſes of this Nature, are called upon to give their Opinion, before any Court of Judicature, as to Matters of Ability or Impotence. If the Urine flow through the Glans, though at a preternatural Aperture; yet ſince a Man is not unfit for Copulation, nor has any Impediment in diſcharging his Urine, it ſeems ſafer to forbear attempting a Cure, than by an Inciſion to occaſion a dangerous Profuſion of Blood, and an Inflammation in the Glans, a Part very full of Blood-veſſels. But if the Urethra be perforated below the Glans, or even below the Frenulum, then two things are chiefly incumbent on the Surgeon. 1. To make a proper Perforation through the Glans with ſome Inſtrument. 2. To agglutinate and cloſe up, as nicely as poſſible, the preternatural, and conſequently incommodious, Paſſage of the Urine.

The Glans may be perforated moſt commodiouſly in two Manners: The firſt is, after a Diſcharge of the Urine, to cut longitudinally in a ſtrait Line the impervious Glans with a Knife, beginning at the preternatural Aperture, in ſuch manner as to lay the Corpora Cavernoſa bare, yet without wounding them in the leaſt. Let the wounded Parts bleed plentifully, according to the Patient's Strength and Habit, the more readily to prevent any Danger of an Inflammation. Then if the Bleeding does not ſtop ſpontaneouſly, fill the Wound with dry Lint, which cover with a Plaiſter and Compreſs, and make a proper Bandage round it. About twenty-four Hours after, remove the Dreſſings and Lint, and introduce a ſmooth leaden Cannula into the Wound, in ſuch a manner as to paſs from the *Extremity* of the Glans, beyond the preternatural Foramen, into the Urethra; and conſequently receive and tranſmit the Urine, till the Cure is completed. Make repeated Scarifications in the callous Lips of the preternatural Orifice; or which is ſafer, cut them away very nicely with a Pair of fine Sciſſars; for the finer the Portions cut off are, the better do the Parts agglutinate; to promote which, glutinous Plaiſters are exceedingly ſerviceable, provided they be narrow, but yet adapted to keep the Lips of the Orifice in Contact.

But they muſt not be brought quite round the Penis, leſt by hindering the Circulation they ſhould cauſe too great a Swelling, and make the Lips of the Orifice part from each other. Put a Compreſs over the Plaiſter, and a ſlack Bandage round it, and laſt of all ſecure the *Cannula* from falling out. After this is done, put the Patient to Bed, and let him keep himſelf very quiet there, and forbear drinking for ſome Days, leſt he ſhould have too frequent Calls to make Water, or at leaſt a Diſcharge of his Urine before the Wound is conglutinated ſhould excite Pain, and, by looſening the Plaiſter, hinder the Coheſion of the Parts: For indeed the firſt Dreſſing ſhould not be removed unleſs there be ſome urgent Neceſſity, before the third or fourth Day; and then it muſt be done with the greateſt Care, leſt the Lips of the Wound, having ſtill but a ſlight Coheſion, ſhould be again ſeparated; and when the Parts are found to cohere, the firſt Dreſſing muſt be kept on for ſome Days: But if on the contrary, they be not joined, it will be proper to lay on a new adheſive Plaiſter, till the Lips of the Orifice are firmly united; as to the reſt, the ſame things are to be done, as directed in every Conglutination of Wounds.

The ſecond Method of Cure is performed in the following Manner: Let the Needle, or fine ſharp-pointed triangular Trocar, (*Tab.* XLV. *Fig.* 2. or *Tab.* XLVII. *Fig.* 6.) be paſſed directly, and very carefully, through the impervious Glans into the Urethra; then, after a ſufficient Quantity of Blood is diſcharged, let a pretty long and ſlender Tent of clean Lint, in order to ſtop the Bleeding, be introduced into the new made Orifice, and a proper Dreſſing applied. But if the Bleeding ſtops ſpontaneouſly, let a waxed coarſe Thread, or a flexible Wax-candle big enough to enter it, be introduced, in order to hinder the *Adheſion of the Lips of the Orifice*. Next Day, let a new Tent, dipt in a digeſtive Ointment, be put into it, but with this Caution, that it reach not beyond the preternatural Foramen from which the Urine has already flowed, ſo that as often as there is Occaſion, the Urine may be diſcharged thro' it, till the Inſide of the new Paſſage be lined with a Membrane; for otherwiſe, ſhould it flow through it too ſoon, it would occaſion Pain in the freſh Wound, and hinder the Production of the Skin. For ſome Days, therefore, let the Tent, and afterwards the Wax-candle of a proper Thickneſs, be dipt twice a Day in ſome deſiccative Ointment, and let the Urine be diſcharged through the preternatural Orifice, till by means of the Wax-candle and deſiccative Ointment, the Membrane be found to be grown over the Inſide of the new Perforation. For then, inſtead of a Tent, Thread, or flexible Wax-candle, a very ſmooth and pretty long leaden *Cannula* is to be introduced into that new Aperture of the Penis, ſo as to paſs beyond the old Orifice, and receive and diſcharge the Urine; by which means the Agglutination of the preternatural Foramen will be more conveniently accompliſhed. The following Method of Cure is moſt commonly made uſe of: Either the Lips of this Orifice are ſcarified with the Knife, or cut as nicely as poſſible, with a fine Pair of Sciſſars, and then joined by laying an adheſive and narrow Plaiſter over them, after which the Wound is to be treated in the ſame manner, as has been ſhewn above in the firſt Method of Cure. The preternatural Foramen being cloſed up, the leaden *Cannula* is likewiſe taken out; and thus the whole Cure is completed. Sometimes, ſuch is the State of that preternatural Foramen of the Urethra, that it cannot be cloſed up or agglutinated; and yet duly perforating the Glans is not entirely an uſeleſs Operation; for when it is properly executed, and a new Paſſage formed, the Patients become afterwards more fit for Procreation. For tho' by this means, perhaps, not all, nor the greateſt Part, yet a conſiderable Portion of the Semen can, in Coition, be thrown into the Uterus. By this very Method of Cure, therefore, thoſe have the Faculty of Generation reſtored, or at leaſt promoted and increaſed, who otherwiſe, through a natural Defect in the Penis, ſeemed almoſt or entirely unfit for Procreation. Beſides, it is very neceſſary, after the Cure has been completed, to open a Vein as ſoon as poſſible, and repeat Bleeding occaſionally, eſpecially in ſuch Perſons as are of a laudable and plethoric Habit. For otherwiſe it may happen, eſpecially in vigorous young Men, that an Erection and Expanſion of the Penis ſhould readily enſue, which may divide the Lips of the Orifice, and conſequently retard the Conglutination, or render it entirely impoſſible.

I know very well, that there are ſome Surgeons, who, in order to cloſe this kind of preternatural Foramen, ſtitch up the Lips of the Wound. Others chooſe rather by Corroſives to conſume the hard and callous Parts of the Foramen, than to cut them away. But neither of theſe Methods of Cure, in Caſes of this Nature, is much to be commended. For the tender Lips breaking, as commonly happens when ſtitched, the old Foramen, inſtead of being cloſed up, is rather enlarged. And by applying Corroſives the Skin may be corroded too much, and conſequently the Orifice made ſo wide, that the Lips can never afterwards be joined together; and both Pain and a troubleſome Inflammation may be thereby cauſed.

URETICOS, ὑρητικὸς, from ὖρον, Urine, is ſometimes ſpoken of the Urinary Paſſages, in which Senſe ὑρητικοι πόροι, are the Ureters; ſometimes it is apply'd to Medicines, and ſo is the ſame as *Diureticos*, ſometimes to the Patient, and imports a Facility of Urine, and in that Senſe is uſed by *Hippocrates*, *de R. V. J. A.* in the ſuperlative Degree, where ὑρητικώτατος, with him, ſignifies a Perſon who has a very free and plentiful Flow of Urine,

Urine; and, in the laſt place, it is ſpoken of a Diſeaſe, and apply'd to a Species of ſymptomatic Fever; and thus *Uretica Febris* is a Fever attended with a Diabetes.

URIAS, οὐρίας. The Urinary Tube; that is, the *Urethra*.

URINA. Urine. See RENES.

The principal Symptoms of Urinary Secretion injured are,

1. Ἰσχουρία, an *Iſchury*, or entire Retention of Urine, the primary Cauſes of which are a Plethora, an Inflammation of the Kidneys, Ureters, Bladder, the Neck of the Bladder, Urethra; a Spaſm, and Compreſſion of the ſame Parts; alſo, an Obſtruction of the ſame from the Stone, Phlegm, Pus, a Thrombus, Caruncle, Impoſtume, or Tumor.

2. Δυσουρία, a *Dyſury*, or Excretion of Urine with Trouble, Labour, or Pain. One Species of this is what we call στραγγουρία, a *Strangury*, in which there is an Emiſſion of Urine by Drops, with a burning Senſation. The Cauſe of both theſe Diſorders is manifold; as principally the Acrimony of new fermenting Beer or Wine, or of their Lees; the acid, ſalt, alcaline, oleous, aromatic, bilious Acrimony of the Humours; an Excoriation of the Parts of the Bladder, or Urethra, by an Inflammaaion, ſome Ulcer, an Attrition by a Stone, and eſpecially from an internal Exhibition of cauſtic Inſects; and, laſtly, from a Stoppage of the Paſſages by a Stone, or a Tumor in the Neck of the Bladder, or the Urethra.

3. *An Incontinence of Urine*, when the ſame flows without Effort or Conſent of the Will, or Reſpiration. This Diſorder generally proceeds from a Reſolution, Dilatation, or Diſciſſion of the Fibres of the Sphincter of the Bladder, or a Conſumption of the ſame by a Suppuration, or a Putrefaction of them by a Gangrene. See INCONTINENTIA.

4. Διαβήτης, a Diabetes which is a frequent and copious Diſcharge of chylous or lacteous Urine. The Cauſe of it is ſuppoſed to be too great a Laxneſs of the urinary Arteries, in Conjunction with an extraordinary Dilutedneſs of the Humours, both which proceed from Aquoſities. *Boerhaav. Inſt. Med.*

An ISCHURY.

A total Suppreſſion of Urine is called *Iſchuria*, ἰσχουρία, "an "*Iſchury*;" but a Diminution of the Action of making Water, is termed *Stranguria*, στραγγουρία, "a *Strangury*;" tho' this latter Word is of much more extenive Signification, as comprehending every *Stillicidium* of Urine, which if not attended with Pain, and the Urine flows by Drops, is a leſſer Degree of *Iſchury*; but if it be painful, is to be referred rather to a Dyſury, or Heat of Urine.

An *Iſchury*, then, or a total Suppreſſion of Urine, is of two Kinds, as it is commonly diſtinguiſhed into the *true*, or *genuine*, which attends a full Bladder, and the *ſpurious* or *baſtard* Kind; in which Affection the Bladder is empty, nothing deſcending into it from the Kidneys.

A *true* and *genuine Iſchury* depends on three Cauſes; the firſt of theſe is *an Abolition of Senſe in the Bladder*, on account of a Reſolution or Obſtruction of the Nerve which ſupplies it, or a Diverſion of the Spirits, for want of which the Bladder feels no Stimulation, nor is it at all irritated to Expulſion, as is the Caſe in Deliriums, and ſoporous Affections.

A ſecond Cauſe is *a cold Diſtemperature of the Bladder*, contracted from refrigerating Cauſes, either internal or external, which obtund the Senſe of the Bladder, and weaken its expulſive Faculty.

A third Cauſe is *a Straitneſs of the Neck of the Bladder*, intercepting the Efflux of the Urine. Of this *Straitneſs* there are three Cauſes aſſigned by *Galen*, *de Loc. Affect. Lib.* 1. *Cap.* 2. For either, firſt, he ſays, the Muſcle ſurrounding the Neck of the Bladder is ſwelled to ſuch a Degree as to obſtruct the Paſſage, which is the Caſe when it happens to be affected with an Inflammation, Scirrhus, Abſceſs, or any other Tumor; or, in the ſecond place, there is an Excreſcence of ſome Caruncle, the Paſſage from ſome preceding Ulcer; or, laſtly, the Obſtruction proceeds from a Callus, or ſome other Subſtance, inſenſibly generated in Length of Time from a groſs and viſcid Humour. The Paſſage may be ſtopped up, alſo, by a Stone, a crude and groſs Humour, grumous Blood, or Pus.

Moreover the Urine may be intercepted by a Compreſſion of the Neck of the Bladder, from a Tumor of the incumbent neighbouring Parts; for Inſtance, the Uterus, when turgid with a large Fœtus; the Inteſtinum Rectum, when ſtuffed with hard Faeces, or the Anus tumefy'd with the Hæmorrhoids increaſed to a remarkable Bigneſs.

Again, a Suppreſſion of Urine is ſometimes occaſioned by an exceſſive Quantity of Urine too long retained, by which the whole Body of the Bladder is diſtended in ſuch a manner as to be incapable of contracting itſelf in order to Expulſion, from which Diſtenſion the Paſſage muſt of Neceſſity be contracted and cloſed up. Now a Repletion of the Bladder from too long a Retention of the Urine, happens in two Caſes: The firſt is when a Perſon in Health, on occaſion of urgent Buſineſs, or when he is at Church, or at the Aſſemblies, at Feaſts, riding in a Coach, or in other like Circumſtances, for want of a convenient Opportunity of Time and Place, voluntarily ſuppreſſes his Urine: And, ſecondly, the Bladder is exceſſively filled and diſtended, ſo as to be incapable of contracting itſelf, from an Inſenſibility of the Stimulus of the Urine, on account of the dulled Senſe of the Bladder, occaſioned by an Affection of the Nerves which ſupply that Part, when the Nerves appropriated to the Conſtriction of the Sphincter Muſcle may all the while remain unaffected. This was the Caſe of a certain Perſon, as we are aſſured by *Galen*, *de Loc. Affect. Lib.* 6. *Cap.* 4. from a Luxation of the Vertebræ of the Spine.

A *ſpurious Iſchury* ſo called is, when the Urine is ſuppreſſed, the Bladder being empty, becauſe there is no Afflux of Urine to that Part. The Cauſe why no Urine deſcends to the Bladder is of two Kinds; being either, firſt, becauſe the Kidneys form no Urine, nor ſend it downwards; or, ſecondly, becauſe the Ureters receive it not. The Kidneys may be injured in their attractive or expulſive Function; the firſt happens when either the Faculty itſelf receives Detriment, or the Object is unſuitable and wrong. The Faculty is injured by a violent Diſtemperature, and principally by a cold one, or is under an Impediment from an Obſtruction either in the Kidneys, or the emulgent Veſſels, proceeding from the Stone, or a Conflict of groſs Phlegm, or Pus, deſcending thither from ſome ſuperior Part; ſometimes, alſo, the emulgent Veſſels are obſtructed by a Repletion from an immoderate Collection of Blood and Serum, an Inſtance of which *Riverius* gives in *Obſ.* 1. *Cent.* 1.

The Attraction of the Kidneys is injured through the Fault of the Object, when the Serum is either conſumed, as in burning Fevers, or diverted to other Parts, which is the Caſe in a Dropſy.

The expulſive Faculty of the Kidneys is in like manner injured by the ſame Cauſes, that is, by a Diſtemperature, Obſtruction by a Stone, grumous Blood, groſs Phlegm or Pus, or by an Inflammation.

The Ureters receive not the Serum, nor tranſmit it to the Bladder, on account of an Inflammation or Obſtruction from the Stone, grumous Blood, Pus, or groſs Phlegm, or from a Compreſſion of the neighbouting Parts by Tumors.

It is to be obſerved, that both Kidneys, or Ureters, muſt be affected, in order to procure a total Suppreſſion of Urine; for while there is an open and a free Paſſage through one of them, the Urine may continue to flow.

All the forementioned Cauſes may each of them be conſiderable enough to procure an entire Retention of the Urine, called an *Iſchury*; but if they are too weak for that Effect, they produce only a partial and diminiſhed Excretion, which we call a *Strangury*. Both Diſorders proceed from the ſame Cauſes differing only in Degree.

The *true* and *proper Iſchury* is known by the Weight and Tenſion of the Hypogaſtrium, and the circumſcribed Tumor, which has the Figure of the Bladder. Its Cauſes are diſcovered from preceding and attendant Circumſtances; for if the Diſorder proceeds from a copious Collection of Urine, which impedes the Contraction of the Bladder, it may be learnt by Relation from the Patient, who will inform you, that he has omitted the neceſſary Buſineſs of making Water for a conſiderable Time, either on account of long Riding, or out of Reſpect to the Place, or the Preſence of ſome honourable Perſon, and that he was never affected in thoſe Parts before. If he happens to labour under a Delirium, Palſy, or any other Diſorder, above enumerated among the Cauſes, the Suppreſſion of Urine is juſtly to be aſcribed to it.

Conſtrictions from Tumors of the ſame or neighbouring Parts, or from other Cauſes above-mentioned, may be known from the proper Symptoms of thoſe Affections. Obſtructions of the Urinary Paſſage may be diſcovered by introducing a wax Candle or Catheter, which, if they cannot penetrate, but ſtop by the Way, are a plain Evidence, that their Paſſage is obſtructed by ſome Stone, Caruncle, or ſome other Matter that blocks up the Way. And theſe offenſive Subſtances may be diſtinguiſhed by the following Characteriſtics: If a Stone be impacted in the Canal, and the ſame be deſcended from the Kidneys, nephritic Pains have preceded; if the Stone be generated, or has long reſided in the Bladder, the Symptoms proper to a Stone in the Bladder have, at leaſt, in ſome ſlight meaſure, preceded the Affection. If a Caruncle hinders the Paſſage of the Urine, it is the Conſequence of a virulent Gonorrhœa, or ſome Ulcer in the Canal of the Penis, which has for a long time been diſcharging purulent Matter. If the Obſtacle be a Grume of Blood, a Concretion of Pus, or groſs Phlegm, they will manifeſt themſelves by an Excretion of ſome ſmall Portions from the Penis in adhering to the Catheter when extracted.

A *ſpurious Iſchury* is diſtinguiſhed by its having no Tenſion,

nor any Tumor or Weight in the Region of the Pubes, but rather a Perception of a kind of Vacuity, or Emptineſs in theſe Parts. There is no Deſire to make Water, no Irritation in the Bladder; and when the Catheter is introduced, tho' the Paſſage be found free and open, no Urine comes away. Preceding Signs are Stones in the Kidneys and Ureters, an Inflammation, or great Plenitude, or exceſſive Drinking, not followed by a copious Diſcharge of Urine, and by that means occaſioning too great a Repletion of the Veins; or, laſtly, a burning Fever, or a Dropſy, by turning the Courſe of the Serum another Way, may be the Cauſe of a ſpurious *Iſchury*.

As to the *Prognoſtics*: A Suppreſſion of Urine is very dangerous, and if it exceeds the ſeventh Day, generally mortal. For the Serum retained in the Veſſels infects and contaminates the Blood, regurgitates upon the whole Body, endangers Suffocation, and, being convey'd to the Head, there induces a comatous Affection.

A Suppreſſion of Urine, which proceeds from a Wound of the Spine, a Fall, or a Luxation of the Vertebræ, is incurable.

If the Smell of Urine proceeds from the Mouth and Noſtrils of the Patient, there is no Hope left of Recovery.

A Teneſmus, ſupervening a Suppreſſion of Urine, portends Death on the ſeventh Day; a ſupervening Hiccough ſhews Death near at hand.

In the Cure of an *Iſchury*, whether total or partial, our Intention is to be directed to the Removal of the Cauſe. And, firſt, with reſpect to the *ſpurious Iſchury*, which depends on Affections of the Kidneys and Ureters, we are to addreſs ourſelves to the Cure of the Inflammation, nephritic Pains, and Stone of the Kidneys. But ſuch an *Iſchury*, proceeding from a Repletion of the emulgent Veſſels, is to be treated by taking away a large Quantity of Blood, and by Hydragogues. A *true Iſchury* is cured by Remedies which remove the Cauſe that produces it. And here, firſt, if it proceeds from an Inflammation of the Bladder, or adjacent Parts, ſuch Medicines as are adapted to the Cure of ſuch Inflammations are to be employ'd.

If the Suppreſſion of Urine be cauſed by a Stone impacted in the Neck of the Bladder, it is to be removed by the following Method:

Firſt, let the Patient be placed on his Back, with his Legs elevated, and be ſtrongly ſhaken for a good while together, that the Stone may ſlip back into the Bladder; and if it cannot be moved by this means, it is to be impelled by introducing the Catheter. If the Stone has penetrated deeply into the Urethra, its Excretion is to be promoted by all manner of Ways, by gently impelling it with the Fingers, and ſo bringing it to the Extremity of the Penis; after that by Immerſion of the Penis in warm Water, or warm Milk, or by immerging the Patient in a Semicupium, in order to relax and dilate the Paſſages. If the Stone can neither be extracted outwardly, nor impelled inwardly, we are directed by practical Authors to make a Ligature above and below the Place, and then to make an Inciſion in the Penis, and ſo take out the Stone.

An Obſtruction of the Neck of the Bladder from an Inflamtion, is cured by Remedies proper for an Inflammation. However, if the Urine be retained for a conſiderable time, a Wax-candle rubbed over with Oil of ſweet Almonds, may be gently introduced, avoiding by all means the Catheter, leſt, by exciting a Pain, the Inflammation ſhould be increaſed.

A Suppreſſion of Urine from a Caruncle is cured by an Extirpation of that Caruncle, which muſt be accompliſhed by proper Remedies introduced by Help of a Wax-candle, which muſt be managed by a Surgeon well ſkilled in ſuch Operations. But when the Symptoms are preſſing, for the Caruncle ſometimes ſwells to ſuch a Degree as to obſtruct the whole Paſſage, we are under a Neceſſity of making a Way for the Efflux of the Urine by the Introduction of the Catheter, though it is to be feared, leſt the Part being irritated ſhould ſwell the more. Before we take this Method, however, we are to attempt a Revulſion by Phlebotomy and Vomiting, and, alſo, to try to diminiſh the Inflation of the Caruncle by an Application of Repellents to the Pubes and Perinæum, that a Way may be made for the Diſcharge of the retained Urine.

An *Iſchury* owing to groſs Phlegm requires Purgation, firſt, with *Diaphœnicon* reduced with Rhubarb into the Form of a Bolus, and afterwards with Turpentine frequently exhibited with Powder of Liquorice. After theſe, a Decoction of the Opening Roots with Oxymel, or Syrupus Byzantinus, may be given; not omitting, during the whole Courſe, the Uſe of emollient and opening Clyſters, Fomentations, and Semicupiums. All ſuch Remedies as are proper for diſſolving and expelling the Stone are, alſo, convenient in this Caſe; and among other peculiar Remedies the following are approved by Experience:

Take Benedicta Laxativa, half an Ounce; Troches of Myrrh, two Scruples; Decoction of Savin, three Ounces; mix them for a Potion. With this Remedy a Suppreſſion of Urine, in a certain Woman, was cured in a ſhort time.

If there be a Redundance of Phlegm in the whole Body, or particularly in the Head, an univerſal Purgation by Apozems for three or four Days together in the Beginning of the Diſorder, will be of very good Service, Phlebotomy being premiſed.

A very good Medicine, alſo, in this Affection, is a Julap prepared of the Juices of Pellitory of the Wall, Sea-fennel, and Lemons, with Oil of ſweet Almonds, preſcribed for the Cure of the Stone in the Kidneys.

Syrupus Fernelii de Raphano, two Ounces the Doſe, is, alſo, very effectual in this Caſe.

Dodonæus relates, *Lib. Conſerv. Cap.* 47. that a Man of eighty Years was perfectly cured of a Strangury by once taking a Lixivium of Egg-ſhells incinerated and mixed with Spirit of Wine.

Arnaldus Villanovanus recommends Wine of Winter-cherries in the following Caſe, related in his Book *de Venis*: "There "was in my Time, he ſays, a certain Cardinal, who for Days "together had laboured under a Suppreſſion of Urine, and was "ſwelled very big, and his Caſe was ſaid to be deſperate. When "all Remedies were of no Effect, at laſt by the Advice of a "Quack, he took a Draught of Wine of Winter-cherries, "and made a vaſt Quantity of Water, and was freed from his "Diſorder. By the good Succeſs of this Experiment this poor "and illiterate Quack grew celebrated and rich." This Wine is prepared as *Arnaldus* there deſcribes it, by taking five, ſeven, or more Winter-cherries, and bruiſing them in White-wine, which muſt afterwards be ſtrained, and ſo exhibited.

Millepedes, alſo, bruiſed in White-wine, and given, are very effectual in provoking Urine. The Oil of Scorpions of *Matthiolus*, to the Quantity of five or ſix Drops, in Broth, or other Liquor, is a potent Diuretic.

The frequent Uſe of Cryſtal Mineral provokes Urine, eſpecially where an Inflammation is feared, which is very often excited by too long a Retention of the Urine in the inner Coat of the Bladder.

Spirit of Salt has the ſame Effect, and in a much greater Degree.

Of common Remedies the Juice of Pellitory of the Wall depurated, and exhibited to the Quantity of four Ounces, with half an Ounce of Sugar, is of great Efficacy; it may be mixed with Sal Prunellæ, or Spirit of Salt.

If a Suppreſſion of Urine, which is owing to a pituitous Matter, makes frequent Returns, there is no better Remedy than the Uſe of the nitrous and ſulphureous Waters of hot Springs, which by frequent drinking and bathing are of mighty Efficacy in diſſolving, abſterging, and conſuming the mucilaginous Matter.

A Perſon of Quality of this City, labouring under a Suppreſſion of Urine for ſeveral Days, after trying many Remedies in vain, was cured by the Injection of the following Clyſter, and retaining it two Hours.

Take of the Roots of Smallage, Parſley, Butchers-broom, Aſparagus, Mallows, Marſh-mallows, each two Ounces; Pellitory of the Wall, two Handfuls; Seeds of Aniſe, Fennel, Dill, Caraway, Daucus, Biſhops-weed, Ballard-ſaffron, Rue, and Cumin, with Bayberries, each half an Ounce; Flowers of Chamomile, Melilot, Dill, and Stœchas, each two Pugils: Boil them in red Wine to the Conſumption of half; ſtrain the Liquor, and in one Pint of it diſſolve four Ounces of freſh Butter, two Ounces of Honey of Roſes, one Ounce of brown Sugar, half an Ounce of Benedict. Laxativ. one Yolk of an Egg, Oils of Nuts, Dill, and Linſeed, each one Ounce: Make them into a Clyſter.

The Chymiſts, alſo, have Remedies which they highly extol for theſe Diſorders, ſuch as Spirits of Salt, Vitriol, Sulphur, and Turpentine, which they exhibit to the Quantity of half a Scruple in proper Waters, or in Chicken-broth. They recommend, alſo, for the ſame Purpoſes, Salt of Tartar, and Salt of Bean-ſtalks, exhibited from half an Ounce to an Ounce.

To make a Revulſion of the Humours from the Parts affected they preſcribe an Emetic, by which means they boaſt to have cured not a few.

Through the whole Courſe of the Cure, Fomentations, Liniments, Cataplaſms, Semicupia, and other external Remedies, the ſame as are preſcribed in nephritic Pains, are not to be neglected. A good Remedy, among others of that Kind, is a Cataplaſm of Pellitory of the Wall fry'd with Butter, or what is better, with Oil of Scorpions; alſo, a Bladder half full of Oil, which will be improved by boiling Scorpions in the Oil.

A common Topic in this Diſorder is a Cataplaſm of fry'd Onions with Swine's-fat, and an Addition of ſome Oils, applied to the Region of the *Pubes* and Loins.

But far more potent in Operation are raw white Onions bruiſed in a Mortar, and with Oil reduced into the Form of a Cataplaſm, and applied to the Kidneys, Ureter, and Region of the Pubes.

A Cataplaſm of bruiſed Radiſhes has the ſame Virtues.

When an Iſchury is produced by Grumes of Blood, we muſt attempt their Diſſolution by Remedies adapted to that Purpoſe. Of the Number of theſe are, Troches of Amber, the Rennet of a Kid, the *Coagulum* of an Hare, Oxymel ſimple, and of Squils, Syrup of Vinegar, and the like. Among external Remedies, Cow-dung is of admirable Efficacy, according to *Aetius*, *Tetrab.* 3. *Serm.* 2. *Cap.* 27.

In the laſt Place, when a Suppreſſion of Urine, or a Strangury, proceeds from Pus, abſterging and inciding Remedies are required, and ſuch as are uſually preſcribed in Ulcers of the Kidneys and Bladder. See ISCHURIA.

Of a DYSURY, *or* HEAT OF URINE.

By the Word *Dyſury*, that is, *Difficulty of Urine*, we underſtand any dolorific or painful Excretion of Urine, which the Moderns generally expreſs by *Ardor Urinæ*, "an Heat of "Urine." Numbers of Authors confound this Affection with a Strangury, which they will have to be attended, alſo, with a painful Senſation, and to be diſtinguiſhed from a *Dyſury* only in that a leſſer Quantity of Urine is diſcharged under it; for which Reaſon it is, alſo, called *Stillicidium Urinæ*, "an Ex-"cretion of Urine by Drops." But we choſe, for the ſake of Perſpicuity, to call a Diminution of the Quantity of the Urine, not attended with Pain, by the Name of *Stranguria*; and comprehended it under the ſame Chapter with *Iſchuria*, becauſe the ſame Method of Cure ſerves for both; and proceed, in this Chapter, to treat of dolorific Excretions of Urine, compriſing them all under the Name *Dyſuria*, "Dyſury;" becauſe they all proceed from the ſame Cauſes, and require the ſame Remedies.

The proximate and immediate Cauſe of dolorific or painful Miction, or making of Water, is, a Solution of Continuity in the ſphincter Muſcle, or *Urethra*; and therefore whatever is capable of making a Solution of Continuity in thoſe Parts, may excite a *Dyſury*, or *Heat of Urine*.

Amongſt thoſe Cauſes, the principal and moſt frequent is, the Acrimony of the Urine, which is ſometimes ſimple, and without the Mixture of other Humours, as proceeding only from an hot Diſtemperature of the Viſcera, or the Uſe of hot and acrimonious Food; but it is more frequently procured by a Mixture of acrid Humours, ſuch as Bile, or ſalt Phlegm. Sometimes a Diſtillation of Pus from an ulcerated Bladder or Kidneys, is the Cauſe of this Acrimony in the Urine; ſometimes a kind of white and milky Subſtance, diſcharged in great Quantity with the Urine, excites this Heat of Urine: This Subſtance, the Generality of Phyſicians take to be purulent, and to proceed from the Kidneys: But their Opinion is rejected by *Sennertus*, for this Reaſon, becauſe if the whole Kidneys were reſolved into Pus, they could not ſupply ſuch vaſt Quantities as are ſometimes exereted every Day, for ſome Weeks together. He ſuppoſes it, therefore, to proceed from a depraved Concoction, firſt, in the Stomach, and afterwards in the Liver; ſince an Error of the firſt Concoction can never be rectified in the ſecond. Hence the Chyle, and after that the Blood, is left in a crude State, without due Depuration from the ſaline and tartareous Parts, which ought to be ſeparated in the firſt Concoction; and theſe Particles, being attracted by the Kidneys, and afterwards tranſmitted to the Bladder, excite that dolorific Senſation in the Act of making Water. He confeſſes that he was induced to be of this Opinion, from obſerving the following Caſe: A learned Gentleman, who had laboured for ſome Weeks under an Heat of Urine, and voided the ſame in conſiderable Quantities, but ſo full of a white Matter, that it took up half the Urinal, and with a great deal of Pain, was at laſt, after trying various Sorts of Remedies to no Purpoſe, perfectly cured only by drinking Malmſey Wine.

A latent Stone in the Bladder, by Alliſion to its Neck, creates a Pain in making Water; the ſame may be excited by groſs Sand vellicating the Entrance into the *Urethra*.

An Inflammation or Ulcer of thoſe Parts excite, alſo, an Heat of Urine, ſince the Parts, being rendered more exquiſitely ſenſible by thoſe Affections, ſuffer conſiderably even from Urine of a good Temperament, juſt as we ſee in external Inflammations or Ulcers, the Parts affected not being able to ſuffer the leaſt Touch from Objects otherwiſe ſuited to them. Thus, in a Gonorrhœa, while the Inflammation of the *Urethra* continues, an Heat of Urine is conſtantly felt.

The Diagnoſis of this Diſtemper is manifeſt of itſelf; for the Pain, under Excretion of Urine, is ſo ſenſible and acute, as frequently to make the Patient cry out: But the diagnoſtic Signs of the Cauſes are to be diſtinguiſhed in the following manner:

If the Heat of Urine proceeds from its Acrimony, it will appear thin, and high-coloured, and ſometimes of a flammeous Colour; or it will be remarkable for a Mixture of bilious, pituitous, or purulent Matter; or there will be a Diſtemperature of the Viſcera, or an hot and acrimonious Diet, a ſultry Seaſon, or the like preceding procatarctic Cauſes.

As for Stone, and Inflammations of thoſe Parts, and the like Cauſes, they will manifeſt themſelves ſufficiently by their proper Signs.

With reſpect to the Prognoſis, this Affection is not dangerous in itſelf, but is very afflictive to the Patient; and, with regard to the various Diſpoſition of the Cauſes, is often difficult to be cured, eſpecially in aged Perſons, whom, if decrepit, it accompanies to the Grave; and at whatſoever Age it happens; if it continues long, it cauſes an Ulceration of the Bladder, and its Neck.

The Cure conſiſts, in the firſt Place, in the Removal of the Cauſe: And thus, if the Dyſury proceeds from the Stone, an Inflammation, or an Ulcer of the Bladder, or its Neck, the Cure is to be managed with an Eye to Indications taken from theſe reſpective Diſeaſes; but ſuch Remedies as are, alſo, proper for mitigating the Symptoms, will be propoſed below.

A Dyſury proceeding from the Acrimony of the Urine, and the Heat of the Humours mixed with it, is to be treated with the following Remedies.

In the firſt Place, Phlebotomy is neceſſary to be adminiſtered, in order to correct the intemperate Heat of the Liver, and other Parts; and the ſame is to be repeated ſeveral times, with regard to the Greatneſs of the Plethora, or the Danger of an Inflammation: 1. In the Right Arm, for Evacuation and Revulſion; after that, in the inferior Veins, for Derivation from the Part affected; on which Account *Hippocrates*, and his Follower *Galen*, in all Affections of the Parts below the Kidneys, preſcribe opening the inferior Vein.

Purging is, alſo, proper in this Diſeaſe, but only with ſuch Cathartics as are of a lenient and cooling Quality; for otherwiſe the Heat of Urine would be highly exaſperated; and therefore ſome, in this Caſe, will not venture to preſcribe more than a Bolus of ſimple Caſſia, which is indeed preferable to other Purgatives. But it will be ſtill more refrigerating, if mixed with the Pulp of Tamarinds, or a Solution of Caſſia in a Decoction of Lettuce, Purſlane, and the Tops of Mallows, may be exhibited for ſeveral Days together, that the Conflux of the acrimonious Humours to the urinary Parts may be gradually derived to the Inteſtines. But if the Redundance of the depraved Humours ſeems to require ſtronger Medicines, we may have recourſe to the following Potion:

> Take Leaves of Lettuce, Purſlane, Plantain, and Tops of Mallows, each half an handful; Tamarinds, Half an Ounce; citrine Myrobalans, one Dram: Boil them to ſix Ounces; ſtrain the Liquor, and infuſe therein, of recent Extract of Caſſia, one Ounce: Strain the ſame again, and diſſolve therein, of Rhubarb infuſed in Water of Lettuce, with yellow Sanders, one Dram and an half; Manna, and Syrup of Roſes, one Ounce: Make a Potion.

In a long Dyſury, a purging Opiate would be of Service.

Vomiting excited by Emetics of the gentleſt Sort, muſt be highly beneficial; for it makes a Revulſion from the Part affected, and avoids thoſe Inconveniencies which uſually attend Evacuations by Stool. It will therefore be proper to be uſed in ſuch Subjects as can bear it with Eaſe, and to be repeated once or twice in a Week.

By Clyſters, frequently injected, not only the acrimonious Humours are derived to the Inteſtines, and, by degrees, purged off, but the hot Diſtemperature and Inflammations of the Bladder, and adjacent Parts, are mitigated and corrected. A Formula, for this Purpoſe, you have as follows:

> Take of Roots of Marſhmallows, one Ounce; Leaves of Mallows, Violets, and Lettuce, each one Handful; Flowers of Water-Lily, and Barley cleanſed, each one Pugil: Boil them to a Pint; ſtrain the Liquor, and in the ſame diſſolve of Caſſia newly extracted, one Ounce; one entire Egg; Oil of Violets, two Ounces; for a Clyſter.

Mucilages of the Seeds of Marſhmallows, Quinces, and Fenugreek, may very properly be mixed with Clyſters, in order to mitigate Pain.

But as Lenients for mitigating Pain, and Coolers for correcting the Heat, Clyſters conſiſting purely of Milk, or of the ſame mixed with the above Mucilages, are uſually moſt efficacious; and we have known ſome Patients who, after long Pains and Afflictions under this Diſorder, have received Relief only from this Remedy, and a Semicupium.

Remedies

Remedies to be taken at the Mouth are very numerous, and found by Experience to be of Service, as Demulcents, in correcting the Heat of Urine, and the Diſtemperature of the Parts. Some of the principal are as follow:

Take of the Waters of Purſlane, Lettuce, Roſes, and Water-Lilies, each one Ounce; Syrup of Violets, and Nymphæa, each ſix Drams; Sal Prunellæ, one Dram: Mix them, for a Julap, to be often repeated. Or,

Take Roots of Marſhmallows, one Ounce; Leaves of Lettuce, Endive, Purſlane, and Tops of Mallow, each one Handful; Seeds of Melon, Gourd, Mallow, Lettuce, and white Poppy, each three Drams; Jujubes, and Sebeſtens, each ſix Parts; Violets, Roſes, and Water-Lilies, each one Part: Boil them to a Pint and an half; ſtrain them; and in the Liquor diſſolve of the Syrups of Violets, Jujubes, and white Poppy, each one Ounce and an half; Sal Prunellæ, half an Ounce: Make a Julap, for four Doſes, to be taken twice a Day.

Emulſions, alſo, are of Uſe, tho' they are diuretic; becauſe they are cooling, and gently cleanſe the urinary Paſſages. Of this Nature is the following:

Take of the Four greater cold Seeds, and thoſe of white Poppy, each three Drams; ſweet Almonds blanched, and infuſed in cold Water, half an Ounce: Pound them in a marble Mortar, pouring thereon, by degrees, of the Decoction of Barley decorticated, Liquorice, Purſlane, and the Tops of Mallow, one Pint and an half: Make an Emulſion for three Doſes; adding, to every Doſe, of Syrup of Violets, one Ounce; Sal Prunellæ, one Dram. If the Pain be greater than ordinary, ſome Syrup of Poppies may be mixed with it. A Dram of the Powder of Gum Arabic is, alſo, proper to be added, or the *Syrupus de Althæa Fernelii*.

Broths may, alſo, be prepared in the following manner:

Take of the Roots of Marſhmallows, half an Ounce; Mallows, one Handful; Liquorice, half an Ounce; Seeds of Quinces, one Dram: Boil them in Broth of a Chicken or Hen; to be repeated for ſeveral Days together.

Whey of Goats Milk, taken in large Draughts, is, alſo, of ſignal Service.

Of no leſs, or rather more Efficacy, in the Abſence of a Fever, is Milk taken by itſelf, eſpecially Aſſes Milk, which not only deterges, but is a Demulcent, mitigating Pain, and correcting the Acrimony of the Humours.

If the Diſorder be of long Continuance, mineral refrigerating Waters, eſpecially ſuch as are impregnated with Alum and Iron, or have a little Tincture of Vitriol, are highly ſerviceable: For it has been found, by Experience, that the Waters of *Matlock*, which are endued with the like Virtue, have ſometimes cured theſe Diſorders, tho' become inveterate.

Inſtead of the Julaps above deſcribed, a ſimple Decoction of Mallows, with Syrup of Violets, may be uſed; by which Remedy, *Foreſtus*, *Obſ.* 4. *Lib.* 25. tells us, he was cured of a very ſevere Dyſury. He found no Relief, he ſays, from any thing, ſo much as from the aforeſaid Decoction; and he informs us, that, with the ſame Remedy, he cured others who were in the like Circumſtances.

The ſame Author, *Obſ.* 3. of the ſame Book, tells us, that one *Jacobus Jeannit*, an Apothecary, cured himſelf, and others, with Roſe-water, beaten with the White of an Egg, and drank at two Doſes.

And he further informs us, that an old Man of *Delft* was cured of this Diſorder by a Decoction of Chamomile-flowers in Milk, to which he was adviſed by an old Woman.

Amatus Luſitanus, *Curat.* 56. *Cent.* 6. relates, that a Woman who laboured under a Dyſury, and could not be cured by a Number of Medicines, which he there deſcribes, was perfectly recovered by a Conſerve of the Flowers of Mallows. Of this Conſerve ſhe took, every Morning and Evening, the Quantity of one Dram, drinking afterwards a Quarter of a Pint of Water of Mallows. And the ſame Author, *Curat.* 59. *ibid.* tells us, that an old Man, who laboured under a Dyſury, after excreting a Stone, was cured by the ſame Conſerve, taken in the ſame manner, in leſs than three Days. The Conſerve of the Flowers of Marſhmallows is of the ſame, or greater Efficacy.

Some experienced Phyſicians commend Troches of Alkekengi, or Winter Cherries, exhibited a Dram at a time, in ſome convenient Liquor; becauſe they are diuretic, and at the ſame time obtund and correct the Acrimony of the Urine.

If the Pain be very ſharp and preſſing, it may be of Service, while the Patient makes Water, to immerge the Penis in warm Milk, or a Decoction of Mallows, and the Seeds of white Poppies; and even warm Water, by itſelf is of no ſmall Efficacy in diminiſhing the Heat and Pain.

By way of Potion, a mild Decoction of Mallows, mixed with Syrup of Violets, or impregnated with Conſerve of Roſes, will be of ſignal Benefit.

For Mitigation of the Heat of Urine, it has been found beneficial, to make Injections into the *Urethra*, compoſed of Milk, Emulſions of the Cold Seeds, Plantain-water, and Whey; with which may be mixed, the Liquor of the White of an Egg well beaten; or a Scruple of the Troches of Winter-cherries.

External Remedies, alſo, are not a little conducive to the repreſſing of thoſe Heats: Such are Baths, and Semicupiums; Fomentations of the *Pubes* and *Perinæum*, by Decoctions of cooling Herbs; Liniments prepared of Oil of Roſes, Oil of Water-Lilies, Ointment of Roſes, *Unguentum refrigerans Galeni*, *Populeon*, with Camphire, and Mucilage of *Pſyllium* (Fleawort) extracted in Plantain-water. Refrigerating Epithems, and the aforeſaid Liniments, are, alſo, to be applied to the Kidneys and Liver, for mitigating their hot Diſtemperature.

When there is a Flux of acrid and bilious Humours, it will be convenient, in order to their Derivation, to apply a Cauſtic to the Right Leg, or to open the hæmorrhoidal Veins, which is of excellent Service in all Affections of the Kidneys and Bladder, according to 6 *Aph.* 11. ſince, from the ſame Branch, called the *Ramus Splenicus*, are propagated thoſe Veins which are diſtributed over the Kidneys, Bladder, and Hæmorrhoids. *Riverii Prax. Med. Lib.* 14. *Cap.* 3.

Bloody Urine.

An Hæmorrhage from the urinary Paſſages, generally called a Diſcharge of bloody Urine, proceeds from a Rupture or Corroſion of the Veſſels either of the Kidneys or Bladder, in ſuch a manner, as that they evacuate their Contents ſometimes with, and ſometimes without any Urine. This Diſorder is more or leſs dangerous, according to the Circumſtances with which it is accompanied.

It frequently happens that Phyſicians are egregiouſly deceived in determining whether the Blood is diſcharged with the Urine, or not. If pure Blood, in conſiderable Quantities, ſuppoſe a Pint, or more, as it ſometimes happens, be diſcharged with the Urine, or Blood, without any Mixture of Urine, be evacuated by the urinary Paſſages, the Matter is paſt all Doubt: But if the Blood is mixed in a ſmall Quantity with the Urine, a more careful Scrutiny is requiſite; for often Urine of a bloody Colour is diſcharged, and depoſites a Sediment which exactly reſembles Blood: On the contrary, Urine of a brown or blackiſh Colour is diſcharged, which is mixed with Blood, tho' no ſuch thing is ſuſpected. For this Reaſon, we ſhall enumerate the certain Signs from which this Variation and Difference is to be judged of. If, then, the Redneſs of the Urine, by which it reſembles Blood, proceeds from ſulphureous Particles exalted by an Admixture, eſpecially, of alcaline Salts, then, as ſoon as it is diſcharged, it appears clear and tranſparent, whilſt the Sediment is of an incarnate and cinnabarine Colour. But this Sediment, by the Application of a ſufficient Heat, again diſſolves in the Urine, which becomes clear and tranſparent as before; whereas, when the Urine is red, by means of Blood, it is opake, and ſomewhat thick, whilſt the Sediment is grumous, of a black-reddiſh Colour, and is either not diſſolved at all, or again abſorbed by the Urine: Beſides, if the Redneſs of the Urine proceeds from Blood, it tinges the Cloth thro' which it is ſtrained, with a reddiſh Colour, which does not happen when the high Colour of the Urine proceeds only from Salts.

As there are various Paſſages for the Secretion and Excretion of the Urine, it is of Importance to know whence the Blood diſcharged flows: If pure Blood is copiouſly and ſuddenly diſcharged, without Pain, *Hippocrates*, in *Sect.* 4. *Aph.* 78. juſtly concludes, that the Blood comes from the ſanguineous and vaſcular Subſtance of the Kidneys: But when the Quantity of Blood is ſmall, of an obſcure blackiſh Colour, with or without a purulent Matter, and eſpecially if there is a Pain during or after the Diſcharge, then it is certain that it proceeds from a Wound or Ulceration of the Bladder. That the Diſcharge of Blood from the Kidneys is without Pain, and that from the Bladder accompanied with one of an highly intenſe Kind, is to be aſcribed to the Diverſity of the Structure of theſe Parts; for the Kidneys are not poſſeſſed of an exquiſite Degree of Senſation; but when the Blood attempts its Paſſage thro' the highly-ſenſible nervous Coats of the Bladder, an intenſe Pain muſt neceſſarily be produced: Nor is it ſurpriſing, that, on ſuch an Occaſion, the Patient ſhould be ſeized with a Train of violent

violent Symptoms; ſuch as Deliquiums, Difficulty of Breathing, an obſcure, ſmall, and ſometimes frequent Pulſe; a Nauſea, Anxiety of Mind, and cold Sweats. Thus *Hippocrates*, in *Lib.* 4. *Aph.* 80. informs us, "That if any Perſon frequently "diſcharges by Urine Blood, and grumous Matter, and at the ſame "time labours under a Strangury, accompanied with Pain in the "lower Part of the Abdomen and Perinæum, ſuch a Perſon la-"bours under a Diſorder of the Parts adjacent to the Bladder." When the Blood is mixed with the Urine in conſequence of a Wound of the Ureters by a large or ſharp Stone, there is an acute Pain about the Loins, and iliac Region, and a difficult Diſcharge of ſandy Urine, whilſt the Diſorder is diſcovered by the other Signs of a Stone lodged in the Ureters. If, in conſequence of a Wound of the Blood-veſſels of the Bladder, and its Coats, any Blood is diſcharged, the Urine is not only evacuated with great Pain, and ſometimes after a previous Obſtruction; but, alſo, grumous Concretions, full of groſs fabulous Molecules, are ſometimes diſcharged with it: And this, alſo, on certain Occaſions, happens, when a Stone, firmly impacted in the Kidneys, wounds them.

There is ſtill another Species of bloody Urine, which is rarely mentioned by Authors, and which proceeds from a too great Diſtention and Aperture of the Veſſels of the Bladder, or rather of the Sphincter. *Cœlius Aurelianus*, in *Tract. de Morb. Chron.* ſpeaks of this Diſorder in the following Manner: "As in the "Anus and Vagina or Neck of the Uterus of Women, ſo, "alſo, in the Bladder, Hæmorrhoids are ſometimes generated, "which diſcharge Blood, at various Intervals. This ought at "firſt carefully to be adverted to, by the prudent Phyſician, "ſince the Effuſion is not at its greateſt Height at firſt, but is "gradually augmented, whilſt the Patient is now-and-then "ſeized with Deliquiums, and the Blood retained about the "Pubes with conſiderable Pain; for ſometimes inflated and "tumid Hæmorrhoids produce a Difficulty or Suppreſſion of "Urine, by the *Greeks* called *Dyſury*, or *Iſchury*." *Archigenes* affirmed, "That as the Menſes and Hæmorrhoids had ſtated "Periods; ſo, alſo, a Plethora ſometimes vented itſelf, at cer-"tain Seaſons, by the Kidneys and Bladder." *Heurnius*, in *Comment. in Aph.* 78. *Sect.* 4. when treating of the different Parts from which the Blood is diſcharged, ſpeaks in the following manner: "The Blood diſcharged from the Bladder is not "intimately mixed with the Urine, but becomes grumous "when it ſubſides; and this grumous Matter, which is ſome-"times evacuated without Urine, produces a Pain about the "Bladder; but Blood diſcharged from the Kidneys is in a "large Quantity, and ſo exactly mixed with the Urine, that "the whole Urine ſeems to be nothing but a thin diluted "Blood: But the Blood immediately ſubſides, tho' it remains "liquid, and is by no means concreted."

But we are not to confound a Diſcharge of bloody Urine with an Evacuation of bloody Semen; for it frequently happens, that, in Perſons labouring under a virulent Gonorrhœa, when the *Proſtatæ* are relaxed, by the too great Afflux of Lymph and Serum, not only the ſeminal Liquor, but, alſo, a mucid Serum, full of ſmall Particles of Sand, and ſometimes Blood evacuated from the Mouths of the Veſſels corroded by the Acrimony of the Matter, is diſcharged from the Urethra, without any Urine.

We are, alſo, carefully to diſtinguiſh between a Diſcharge of bloody Urine, and that Evacuation of Blood which is made from the Integuments of the Penis. I have known ſeveral Inſtances of Men, in whom, at certain Periods, a large Quantity of pure Blood has, for ſeveral Weeks, been diſcharged from the Penis, after a preceding tenſive Pain of the Groin and Thighs. *Stalport Vander Wiel. in Cent.* 1. *Obſ.* 80. has collected Inſtances of the ſame Kind. But, in this Caſe, the Blood diſcharged is not mixed with the Urine, but is diſcharged by itſelf, Drop by Drop, from the Ramification of the external hæmorrhoidal Veins, which is diſtributed to the Pudenda.

We are, alſo, carefully to diſtinguiſh between a critical and ſalutary Diſcharge of Blood, and that which is morbid and prejudicial: The former moſt frequently happens in large Quantities from the Kidneys, and ſometimes but rarely in a ſmall Quantity from the Sphincter of the Bladder, without Pain, or great Uneaſineſs, and returns at certain Periods. This principally happens by a Tranſlation of the Blood which ought to be eliminated by the Menſes or Hæmorrhoids, when theſe Evacuations are either obſtructed, or ſuppreſſed. I have ſeen ſuch critical Diſcharges of Blood from the Penis, in young and old Men of plethoric Habits, ſucceed a Ceſſation of the hæmorrhoidal Flux, or an Omiſſion of uſual Veneſection, without any manner of Danger: I have, alſo, ſeen Diſcharges of bloody Urine, in Women of eighty Years of Age, who lived high, and enjoyed good Health, eſpecially if, after the Ceſſation of their Menſes, they neglected Veneſection.

Beſides, I have frequently obſerved, that old Perſons, when the hæmorrhoidal Diſcharge ceaſed, and middle-aged Men, afflicted with the blind Hæmorrhoids, after violent Commotions either of Body or Mind, have diſcharged a large Quantity of Blood of a browniſh Colour, like Coffee, without any Difficulty of Urine; and this Blood, undoubtedly, proceeds from the Blood-veſſels about the Sphincter of the Bladder: For the external hæmorrhoidal Veins communicate with the Bladder, and diſtribute Ramifications to it. But it is not ſo with the internal Hæmorrhoidals, whoſe Ramifications diſtributed to the Bladder, have not, as yet, been ſeen by any Anatomiſt.

This Excretion of Blood with the Urine, ariſing from the Suppreſſion of other ſanguineous Excretions, eſpecially the Hæmorrhoids, principally happens from the Kidneys, whilſt the Blood, accumulated and conveyed thro' the inferior meſaraic Artery to the Coats of the *Inteſtinum Rectum*, not finding a Paſſage there, as it were, regurgitates to the Trunk of the great Artery, or is rather there collected in great Quantity; and, being conveyed to the arterial Veſſels of the Kidneys, which, both in Number and Bulk, exceed the emulgent Veins, by diſtending and opening their Orifices, paſſes to the urinary Ducts which are connected with the Extremities of the ſmall Arteries, from which it is conveyed to the Mouths of the Papillæ, thence to the Pelvis, and thence into the Ureters and Bladder. In ſuch a Caſe, therefore, neither *Anaſtomoſis*, nor *Diæreſis*, nor *Diapedeſis*, ſo much talked of by Authors, obtain.

The Bladder is, alſo, greatly ſubject to Excretions of Blood; becauſe, on account of its perpendicular and low Situation, the Return of the Blood from it thro' the Veins, is very difficult. Hence it is, that, in the tumid external Hæmorrhoids, or the internal Hæmorrhoids, when obſtructed, eſpecially in plethoric Patients, the Blood accumulated and ſtagnant there, preternaturally enters the Orifices of the capillary Veſſels of the Bladder, or rather of the Sphincter.

The Suppreſſion or Ceſſation of the hæmorrhoidal Diſcharge by any Cauſe whatever, is the principal Cauſe of that Species of bloody Urine in which the Blood is conveyed from the Kidneys. *Hercules Saxonia*, in *Lib.* 3. *Cap.* 4. gives us an Inſtance of a Perſon of Diſtinction who, during five Years, labouring under a Suppreſſion of the Hæmorrhoids, now-and-then evacuated from the Urethra large Quantities of Blood, before he diſcharged his Urine. *Rolfinckius*, in *Diſſert. Anatom. Lib.* 5. *Cap.* 26. tells us, "that a Perſon of Diſtinction, ſubject "to the hæmorrhoidal Flux, upon having it ſuppreſſed, "fell into a Diſcharge of bloody Urine, which laſted for ſeveral "Weeks, but diſappeared when the Hæmorrhoids were re-"called in a very moderate manner." *Reiſelius*, in *Epiſtol.* 64. tells us a memorable Story of a Shepherd, who, having a Suppreſſion of the Hæmorrhoids for three Years, evacuated ſometimes ſuch a Quantity of pure Blood, without any Urine, as to fill a Chamber-pot; nor had the Patient, ever in his Life, uſed Veneſection: But after he had three Paroxyſms of this Kind returning at ſtated Periods, limpid and natural Urine was diſcharged. But when, by the Advice of his Phyſician, he uſed Wine pretty liberally, took Pills prepared of Aloes impregnated with Juice of Succory, and Extract of the Troches of Alhandal, the Hæmorrhoids returned, and his Diſorder ceaſed.

Tho' all violent Exerciſe, in plethoric Perſons, lays a Foundation for Hæmorrhages; yet no Species of Exerciſe has a more direct Tendency to excite a Diſcharge of bloody Urine, than Riding. Various Inſtances of this occur in practical Authors: Thus *Riverius*, *Cent.* 2. *Obſ.* 13. gives us an Account of a Man, of fifty Years of Age, who diſcharged bloody Urine every time he rode. *Hollerius*, alſo, in *Aphor.* 78. *Sect.* 4. *Hippocrat.* ſpeaks in the following manner: "If ſome Perſons "ride hard, or uſe immoderate Exerciſe, they diſcharge Blood "from their over-heated Kidneys." And, a little after, ſays he, "I am of Opinion, that bloody and turbid Urine was diſ-"charged by a reverend Biſhop, both on account of the Di-"latation made in the Cavities of the Kidneys, and in the "urinary Paſſages, on account of the exceſſive Heat, firſt ge-"nerated by the violent Motion of the Chariot driven quickly "in a rough Road, which agitated his whole Body, and eſpecially "the Region of his Back; and then, by the ſucceeding exceſ-"ſive Heat; whilſt, with a Coat of Skins, he aſcended the "Mountain under a ſcorching Heat of the Sun. By all theſe "Things, ſo great an Heat was excited in the Parts about the "Kidneys, that, on account of their too great Dilatation, "bloody Urine was diſcharged. Hence it is, that even now, "when he is fatigued, or uſes violent Exerciſe, his Urine is "turbid, and bloody." The Reaſon why Riding, which is of great Efficacy in curing other chronical Diſeaſes, diſpoſes to Hæmorrhages of the Kidneys and Bladder, is, that by the Compreſſion of the Veins in the Thighs, the *Perinæum*, and the *Anus*, the Return of the Blood is greatly retarded. Hence the Quantity of the Blood is enlarged in the Arteries, and its Motion in the ſuperior Parts increaſed, eſpecially about the

Loins, by means of the ſuccuſſory Agitation. Thus the Afflux of the Blood being rendered briſker, the emulgent Arteries, at laſt, eaſily open. For *Malpighi*, in *Tr. de Renibus*, juſtly obſerves, "That, if we except the Lungs, there is no Part of "the human Body more ſubjected to the Injuries of a redun-"dant Blood than the Kidneys."

A Stone in the Kidneys is, alſo, frequently the Cauſe of a Diſcharge of bloody Urine, which is more troubleſome and dangerous than the former: Of this there are many Inſtances; ſuch as that related in *Horſtius*, *Lib.* 4. *Obſ.* 37. where, without any Pain of the Loins, nephritic Patients, eſpecially when plethoric, upon uſing violent Exerciſe, are obſerved to diſcharge bloody Urine. This probably happens, becauſe a pretty large Stone, of a ſharp Figure, may for a long time remain without Pain in the Kidneys, and yet, by its Compreſſion and Attrition, excited by Exerciſe, conſiderably injure the vaſcular Subſtance of the Kidneys, greatly hurt their natural Functions, and, by that means, lay a Foundation for an Eruption of the Blood: For when the Stone, by its Bulk and Weight, compreſſes the Ramifications of the emulgent Vein, by hindering the Paſſage of the Blood thro' them, it proves the Cauſe why the Blood *copiouſly and impetuouſly* conveyed thro' the ſmall emulgent Arteries, and their capillary Ramifications, which terminate in the urinary Ducts, greatly diſtends the former, and at laſt makes its Way into the latter, which, in a natural State, were only deſtined for the Conveyance of Urine: And this happens more violently and infallibly when in Perſons diſpoſed to the Stone, various Medicines which force Urine, and the Stone, are exhibited; which is a common tho' a wretched Cuſtom, eſpecially if theſe Medicines are of the hot Kind; ſuch as Preparations of Turpentine, Amber, and Juniper: For, in ſuch a Caſe, the Stone, pent up in the Kidneys, by corroding, excoriating, and dilacerating the ſmall Veſſels of the Kidneys, produces an Exulceration; in which Caſe, Pus and Blood drop thro' the Ureters into the Bladder, and, conſequently, a painful Diſcharge of ſome Portion of the Urine, with which corrupted Pus and Blood are evacuated, is produced. This, alſo, happens the more rarely, when the Ureters are exulcerated by a Stone.

There is, alſo, a copious and dangerous Diſcharge of bloody Urine, when, from an Exulceration of the Bladder, ariſing from a copious, acrid, and ſtagnant Blood, a mucous, purulent, and bloody Matter deſcends into its Cavity; for, in this Caſe, the Urine is diſcharged with intenſe Heat, intolerable Pain, and Difficulty, whilſt the Diſorder is accompanied with Tremors and convulſive Motions of the Limbs, attended with Colds and Tremblings. I have, alſo, frequently ſeen this happen in Perſons labouring under virulent and inveterate Gonorrhœas, whilſt an acrid and corroſive Matter flowed from the Genitals, and corroded the adjacent Parts. When this Caſe happens, and when the Subſtance of the Kidneys or Bladder is corrupted, and a purulent and putrid Matter is ſecreted, furfuraceous Urine is diſcharged, with ſmall Caruncles or Subſtances reſembling Hairs or Worms in it, which can never come from the Bladder, ſince it is not poſſible they ſhould be its Filaments. They muſt, therefore, proceed from the mucous Matter contained either in the Kidneys, or Bladder, concreted into ſuch a Form and Conſiſtence.

Another Species of bloody Urine may be produced by external Cauſes, ſuch as Contuſions, Falls, Blows, and the lifting of Burdens: This frequently occurs in Practice, tho' it is not very eaſy to account for it: For if it proceeded from a Rupture of the Veſſels in the Kidneys, or a Solution of Continuity in them, it could not be ſo ſpeedily cured by Veneſection, and ſuch Things as diſſolve the Blood. I am rather of Opinion, that, by the Contuſion or Contorſion, eſpecially of the Blood-veſſels, and the Stagnation of the Blood there, its Circulation through thoſe wounded Parts is hindered, by which means the Impetus and Quantity of the Blood is increaſed in the internal Veſſels; and when theſe, eſpecially in plethoric Perſons, are diſtended, the Blood is eaſily diſcharged from them. This very eaſily happens in the Kidneys, if a Blow has been inflicted on that Region. Hence there are Inſtances in which Diſcharges of bloody Urine have ſucceeded Luxations of the *Vertebræ*. As *Hildanus*, in *Cent.* 2. *Obſ.* 10. obſerved a Dyſentery produced by the Amputation of a Leg, ſo I knew a Diſcharge of bloody Urine ſucceed a Fracture of the Bone of the Leg: So that it is eaſy to conceive how, by a Contuſion of the Veins, and a Stagnation of the Blood elſewhere, ſome Part of it may be diſcharged through the *Urethra*.

It is certain from Experience, that Diſcharges of bloody Urine may be produced by violent Gripings of the Abdomen, by acrid Purgatives, and by ſtrong Diuretics, ſuch as Cantharides; but this Symptom is owing to the ſpaſmodic Stricture of the Veins, by which the free Circulation of the Blood is intercepted: Hence we may eaſily give a Reaſon why the Meaſles and Small Pox, eſpecially of the malignant Kind, are ſometimes

accompanied with this terrible Symptom. There are Obſervations in ſome Authors, in which it is affirmed, that, by Veſicatories, in which there are Cantharides, a Diſcharge of bloody Urine is ſometimes produced: But as I never obſerved any ſuch thing, we may juſtly ſuſpect that the bloody Urine proceeded from ſome other Cauſe.

No Diſcharge of bloody Urine is free from Danger: For though, at the Beginning, it may appear critical and ſalutary, on account of the Redundance of Blood produced by a Suppreſſion of the Menſes, or Hæmorrhoids, yet it is dangerous, becauſe it not only eaſily recurs and exhauſts the Strength, but, alſo, if an Error in Regimen is committed, or if it is imprudently treated with Styptics, an Inflammation and Corruption are readily induced on the Kidneys, or Bladder: It, alſo, frequently happens, that a certain Portion of grumous Blood deſcending from the Kidneys, is ſo firmly impacted in that Part of the Ureter, where it is obliquely inſerted into the Bladder, as to produce a violent Iſchury, not to be cured without the greateſt Difficulty. Sometimes, alſo, Blood becomes grumous in the Cavity of the Bladder; and, adhering firmly to the Sphincter, produces an intenſe Pain, and a total Suppreſſion of Urine. The ſame, alſo, happens, when the Blood-veſſels of the Sphincter, like the blind Hæmorrhoids, become turgid with thick Blood.

The moſt dangerous Species of bloody Urine is that which proceeds from a profound Wound or Ulceration of the Kidneys or Bladder, and is accompanied with an intenſe Pain, and an Evacuation of Pus: We are not, however, to take the mucous and glutinous Sediment, ſometimes obſerved in bloody Urine, for Pus, which generally floats on the Surface; for the Quantity of this Sediment is often ſo great, that if it proceeded from an Exulceration of the Kidneys, they would ſoon be conſumed by it: It is rather a Mucoſity which drops from the too much relaxed glandular Coat of the Bladder and *Urethra*, or from the wounded *Proſtatæ*; after which, it is mixed with the Urine.

Having thus conſidered the various Cauſes and Seats of bloody Urine, it is incumbent on the ſkilful Phyſician to have a due Regard to all theſe, both in his Meaſures for the Prevention and Cure of this Diſorder: When, therefore, a Diſcharge of bloody Urine ariſes from a Redundance of Blood, or is to be dreaded from that Cauſe, nothing is more ſafe and efficacious than Veneſection; only obſerving this Caution, that, during the Paroxyſm, it is to be performed in the ſuperior Parts, that is, the Arm; and the Quantity to be taken away is to be eſtimated by the Patient's Strength, and Habit of Body. But if a Diſcharge of bloody Urine ariſes from a Suppreſſion of the Hæmorrhoids, it is ſafer, in order to prevent a Relapſe, to open a Vein in the Foot: The ſame Practice is, alſo, to be obſerved, when, in a ſpaſmodic Colic, and violent Gripings of the Abdomen, a Diſcharge of bloody Urine happens, on account of the Stagnation and Congeſtion of Blood about the Coats of the Inteſtines, and its Incapacity of being diſcharged from the hæmorrhoidal Veins. Beſides, as this Diſorder generally returns at ſtated Periods, it is ſo much the more neceſſary we ſhould prevent its Approach by ſeaſonable Veneſections.

When this Diſorder derives its Origin from a violent Ebullition or Expanſion of the Blood, with or without a *Plethora*, which generally happens by violent Commotions either of Body or Mind, or by the Abuſe of hot Medicines, which too ſtrongly agitate the Blood, beſides Veneſection, nothing is more efficacious than the Uſe of nitrous Medicines, and ſuch as check the elaſtic inteſtine Motion of the Blood; or Refrigerants, the beſt of which is depurated or artificial Nitre prepared with Spirit of Nitre and Salt of Tartar, mixed with earthy and abſorbent Subſtances, and exhibited either in the Form of a Powder, or a Potion. The beſt Vehicles for this Medicine are, ſweet and acidulated Whey, a Decoction of Barley, pure Spring-water, or Spring-water mixed with an equal Quantity of *Selteran* or *Tonſtein* Waters, a Decoction of Hartthorn and Vipers-graſs, or ſmall Ale into which a ſufficient Quantity of the Tincture of Roſes, or Daiſy-flowers, with Spirit of Vitriol, but not of Salt, whoſe volatile Acrimony is prejudicial to the Lungs and Kidneys, has been dropped.

As Coſtiveneſs is of great Force, not only in generating, but, alſo, in ſuſtaining this Diſorder, partly becauſe by the Flatulencies and Spaſms ariſing thence the equal Circulation and Diſtribution of the Blood is hindered, and more copiouſly conveyed to one, eſpecially the weakeſt Part, than others, and partly becauſe many impure, acrid, and bilious Sordes, are conveyed from the *Primæ Viæ* to the Maſs of Blood and Humours, hence nothing is a better Preſervative againſt this Diſorder, or more efficacious for preventing a Relapſe, than keeping the Body duly ſoluble: But this End is not to be procured by Purgatives, acrid Stimulants, or large Doſes of Salts; much leſs by Preparations of Aloes, or Pills which contain even the leaſt Quantity of that Ingredient. The Intention is rather to be an-

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ſwered by mild Laxatives of a corroborative Quality, which, as they are beſt in all preternatural Excretions of Blood, ſo, alſo, they are moſt efficacious and ſafe in this. The beſt of this Kind are, Preparations of Rhubarb mixed with Raiſins; ſuch as Currans rendered laxative by a gentle Inſpiſſation with a Solution of Rhubarb, or Powder of Rhubarb, mixed with Cream of Tartar.

In order to corroborate and gently conſtrict the dilated and opened Veſſels of the Kidneys, or in order to conſolidate their Subſtance if wounded, the moſt efficacious Medicines are, Decoctions or Infuſions of gently vulnerary and aſtringent Ingredients, ſuch as Agrimony, Ground-ivy, Horſetail, Yarrow and its Tops, Golden Rod, and the Root of the greater Conſound edulcorated with *Pruſſian* Honey, which is highly friendly to the Kidneys. Theſe Decoctions may be, alſo, mixed with Milk, according to the Situation of the Patient. Almond Milk, eſpecially when uſed as a Vehicle for *Armenian* Bole, is, alſo, of ſingular Efficacy in healing and conſolidating theſe Parts.

If a Corroſion or Ulceration of the Kidneys, Ureters, or Bladder, are preſent, which often happens when the Diſorder is of long Standing, and accompanied with Pains, the principal Intention of the Phyſician ought to be, to correct the Acrimony of the Humours; and ſo long as this is neglected, neither an Alleviation of the Pain, nor a Conſolidation and Cure of the wounded Part, are to be expected. This Intention is therefore excellently anſwered by *Fernelius*'s Syrup of Marſhmallows, *Foreſtus*'s Decoction, and that recommended by *Mynſicht* againſt a Diſcharge of bloody Urine. The ſame End is, alſo, anſwered by an Infuſion, which, beſides the above-mentioned vulnerary Herbs, has, for Ingredients, the Bark of *Egyptian* Thornroot, and Cherry-tree Gum: A Powder, alſo, prepared of the Roots of Marſhmallows and Liquorice, *Sperma Ceti*, the Four cold Seeds, white Poppy-ſeeds, the Seeds of Club-moſs, and Saffron ſweetened with a ſufficient Quantity of Sugar-candy, are, alſo, of Service.

For a Dyſury or Iſchury, which are frequently dangerous Symptoms of an Hæmorrhage from the Kidneys or Bladder, whilſt grumous Concretions of Blood obſtruct the Ureters in that Part where they are inſerted in the Bladder, or the Sphincter of the Bladder itſelf, no Medicine affords a more efficacious or inſtantaneous Relief, than large Draughts of tepid Water, and the external Uſe of Baths. In this Caſe it is, alſo, expedient, to inject into the *Urethra* and Bladder tepid Water, in order to dilute the acrid Humour, and diſſolve the grumous Concretions. *Hippocrates*, as we have already obſerved, recommends theſe very Remedies: But if, on account of grumous Concretions in the Bladder, or its Sphincter, ſuch Spaſms are excited, as to induce a total and hurtful Iſchury, excellent Effects are produced by an Emulſion of the Four cold Seeds prepared with Crabs-eyes and diaphoretic Antimony; as, alſo, by a Powder prepared of *Sperma Ceti*, Crabs-eyes, and Nitre; externally a Bladder, full of a Decoction of emollient Flowers, is to be applied to the Abdomen; the Body is, alſo, to be rendered ſoluble, by a Laxative of Manna, or by an emollient oleous Clyſter.

Beſides all theſe Remedies for curing recent, and removing inveterate Diſorders of the Kidneys and Bladder, nothing is more efficacious than temperate medicinal Waters; ſuch as the *Selteran*, *Antonian*, and *Wildungenſian* Springs, eſpecially if mixed with Milk, but rather Aſſes Milk. This is ſufficiently obvious from the ſalutary Elements of which they are compoſed, and the unanimous Conſent of thoſe who have wrote concerning their Virtues.

Milk and Whey are, alſo, excellent Remedies againſt this Diſorder: For *Hippocrates*, in *Lib. de Intern. Affect. Sect.* 17. ſpeaks in the following manner: "If the Urine is diſcharged "like the Juice of roaſted Beef, the Patient is to drink Whey "and Milk; Whey till he is ſufficiently purged, and Milk for "forty or fifty Days; by which means, the Diſorder is alle-"viated." The Milk of Sheep and Goats is, alſo, recommended by *Riverius*, in *Obſ.* 13. *Cent.* 17. as, alſo, by *Gatinarius* and *Foreſtius*, who affirm, that, by this ſingle Remedy, they have effectually cured a Diſcharge of bloody Urine, mixing with each Doſe one Dram of *Armenian* Bole. *Riverius* is, alſo, of Opinion, that this Practice is proper in violent Diſcharges of bloody Urine; though he thinks it leſs expedient in thoſe of a moderate Kind.

With reſpect to Veneſection, which is of the greateſt Importance both for curing and preventing a Return of the Diſorder, if it proceeds from a Suppreſſion of critical Hæmorrhages, we are to obſerve, that, in the Beginning, a large Quantity of Blood is to be taken away; for by this means the Deſign not only of Evacuation, but, alſo, of Derivation, is anſwered: But when a Diſcharge of bloody Urine is periodical, a Vein is to be opened two or three Hours before the Paroxyſm, and ſuch a Quantity of Blood taken away as the Patient can bear.

Hippocrates, in the Part laſt quoted, in a Diſcharge of bloody Urine ariſing from an Exulceration of the Kidneys or Bladder, orders the Patient to drink temperate White-wine of a yellowiſh Colour; for too ſpirituous Wines, or ſuch as abound with an Acid, ſuch as Rheniſh-wine, are by no means proper where there is a painful Diſcharge of bloody Urine; but rather ſweet Wines, ſuch as thoſe of *Spain*, the *Canary* Iſlands, and *Hungary*; for they not only promote Digeſtion, but are, alſo, friendly to the affected Bladder.

Since it is of great Importance what Kind of Liquor a Perſon labouring under any Diſorder of the Kidneys and Bladder drinks, we are to obſerve, that he is carefully to abſtain from thick and acid Ales, but to uſe large Quantities of ſmall pure Beer, which, like an aqueous Medicine, reſolves and carries off the acrid and ſandy Matter. This is confirm'd by the celebrated *Sydenham*, in his Treatiſe *de Mictu cruento a Calculo Renibus impacto*. And that Phyſician, as ſoon as he entered his Coach, took a large Draught of Small Beer, which he repeated before he return'd Home, if he chanced to ſtay a conſiderable time; by which means he affirms, that he prevented a Diſcharge of bloody Urine. But the Ale uſed on this Occaſion ought to be well boil'd, and fermented.

Though proper Exerciſe is of great Importance for the Prevention and Cure of chronical Diſorders; yet it is quite otherwiſe in Excretions of Blood, eſpecially from the urinary Paſſages; for nothing is more effectual in bringing on this Diſorder than violent Exerciſe, eſpecially Riding: And I have, alſo, ſeen loud and long-continu'd Speaking prove highly prejudicial in a painful Diſcharge of bloody Urine, ariſing from a Diſorder of the Bladder. Thus *Hippocrates*, in the Paſſage already quoted, tells us, "that when Blood is diſcharged with the "Urine, the Patient is ſoon cured, if he enjoys a State of "Reſt; whereas by Exerciſe his Pains are rendered far more "intenſe." *Sydenham*, alſo, in the before-mentioned Treatiſe, determines the Matter by his own Example; for when he walked much, or rode in a Coach, though very ſlowly, in the Streets, he was ſeized with a Diſcharge of bloody Urine; whereas, when he performed long Journeys in a Coach on the high Road which is not paved with Stones, he was never afflicted with that Symptom. He, alſo, tells us, that he went ſoon to Bed, that the Concoctions, which are diminiſhed by nocturnal Lucubrations, might be the more duly performed.

In a Diſcharge of bloody Urine, whether from the Kidneys, or the Bladder; whether critical, or ſymptomatical; nothing is either more common, or more prejudicial, than the Uſe of Aſtringents, which too ſuddenly ſtop the Evacuation of the Blood; for by this means Inflammations, Exulcerations, and Putrefactions are produced, by the grumous Concretions retained in the Veſſels: For as a Spitting of Blood, treated by theſe Remedies, eaſily degenerates into an Inflammation, Phthiſis, or Exulceration of the Lungs, ſo, alſo, a Diſcharge of bloody Urine terminates in an Inflammation, Exulceration, and Putrefaction. When, however, the Effuſion of Blood is very violent, and accompanied with exceſſive Loſs of Strength, I have found excellent Effects produced by the following Mixture, ſucceſsfully uſed by *Sylvius*, in Diſcharges of bloody Urine.

> Take of Plantain-water, two Ounces; of the Waters of Purſlane and Cinnamon, and of diſtilled Vinegar, each one Ounce and an half; of prepared red Coral, Crabs-eyes, and Seal'd Earth, each one Scruple; of liquid Laudanum, three Grains; and of *Quercetan*'s Syrup of Coral, or *Fernelius*'s Syrup of Comfrey, a ſufficient Quantity to render the Preparation grateful.

Topics are, alſo, advantageouſly applied to the lumbar Region: For this Purpoſe we may uſe the Frog-ſpawn Plaiſter mixed with Alum, or Sugar of Lead, and a little Camphire: The White of an Egg, beat with Alum, and applied pretty cold to the Pubes, by way of Epithem, is, alſo, of conſiderable Service: For theſe, by their mild, refrigerating, and aſtringent Quality, in ſome meaſure check the Impetus of the Blood.

Thoſe who are now-and-then afflicted with this Diſorder, or diſpoſed to it, ought to be very careful with reſpect to their Regimen and Diet, carefully abſtaining from Wine, all Aromatics, eſpecially Garlic and Onions, together with aperient Roots, ſuch as thoſe of Parſley, Parſneps, Celery, and Aſparagus. Nor ought they to ſleep upon their Backs, or lay them upon too warm Cloths, or Skins. Exceſſive drinking of warm Infuſions of Tea, or other Herbs, is to be avoided, and rather cold, or ſomewhat cold Liquors, are to be uſed. I often, with great Succeſs, order a Decoction of dried Cherries in Piſan, to be uſed as common Drink. *Frederic Hoffman.*

Of

Of Predictions from URINE; *of the Nature and Causes of* URINE; *and of what Importance it is with respect to Prognostication.*

Since it has been demonstrated that the Life or Death of the Patient in acute Diseases may be predicted from the *Stools*, [see DEJECTIO] we are now in course to examine into the Signs and Prognostics which may be afforded from *Urine* relating to the same Subject; for the Observation of the *Urine* is of no less Importance than that of the other Excretions towards the presaging a good or bad Event to Diseases. *Galen, de Loc. Affect. Lib.* 6. *Cap.* 4. tells us, that the gibbous Parts of the Liver, and all others which are superior to these, are subjected to an Expurgation by *Urine*; and *Com.* 2. *in Lib. Prognost.* 7. 26. he says, that the *Urine* is an Indication of the Affections of the Bladder and Kidneys; and more than this he tells us, *Com.* 2. *in* 1 *Prorrhet. T.* 2. that it indicates, also, the Strength or Weakness of the Blood-vessels, and of the Faculty which generates the Juices. Many Disorders, therefore, though not all, as is vulgarly imagined, in a great many Parts of the Body, may be judged of by the *Urine*, as may, also, all Fevers, Hectics excepted, and Inflammations, though these latter, when affecting the Thorax, are first signify'd by the Spit, as those which affect the Belly are indicated by the Stools; but even in these Cases, the Judgment which may be made of them from the *Urine*, is not to be despised.

Since therefore the Observation of *Urines* is of vast Moment towards the Prognostics of many Diseases, it justly deserves our Inquiry how far we may venture to prognosticate from them with respect to the Life and Death of the Patient. For this End it will be proper to premise a few things concerning the *Differences* and *Causes* of *Urines*, which are necessary to be known, in order to predict Events from them in Diseases.

Every Physician knows, that the *Urine* is a serous Excrement, secreted by the Kidneys, and from them by the Ureters transmitted to the Bladder, from which it is excreted and discharged from the Body. But by *Urine* we understand not only the serous Humidities, but all other Substances which are evacuated by *Urine*, since they are of great Moment towards a Prognosis. For the Matter of *Urine* seems to be of three Sorts: Sometimes the Excretion consists of the Humidities of the Meat and Drink, which, from those who drink much, are commonly discharged in a crude and aqueous State. Secondly, the *Urine* is sometimes nothing but the serous Humidity of the Blood impregnated with the Quality of the predominant Humour; and, in the last place, it may be composed of Humidities proceeding from a Colliquation, as when it is of a fattish Substance. This triple Matter of the *Urine* is very elegantly expressed by *Hippocrates*, 6 *Epid. Sect.* 5. *Aph.* 14. in the following Words; ἐστὶν ὁμόχροον βρώμασι καὶ πόμασι, καὶ ὡς ἐπὶ τὸ πολὺ ἐστὶν, ὑγροῦ τοῦ ἔνδον ξύσπασις, "*Urine* is of the same Colour with "the Meat and Drink, and is, as it were, a Colliquation of "the internal Humid."

But let us now take a distinct View of the Differences of *Urines*, and they may be distinguished with respect to their *Substance*, *Qualities*, *Quantity*, and *Contents*.

As to their *Substance*, some are thin, others thick, and others are of a middle Kind; of the thin Sort some continue so a long Time, others soon become thick; after the same manner, of *Urines* voided thick, some continue in that State, others become thin.

With respect to their *Qualities*, there is a triple Difference observable, one in regard to their *Colour*, another as to their *Clearness* or *Obscurity*, and a third with respect to *Smell*.

Urines, with regard to *Colour*, are distinguished into *white*, *pale*, *yellow*, *gold-coloured*, *red*, *green*, *livid*, and *black*. There are several other Colours of *Urine* enumerated by some; but these, which are the principal, will be sufficient to furnish us with Prognostics: And some of these Colours are united with, or proper to *Urine* of a thin Substance, others to thick *Urine*. To thin *Urine* belong the *light-red*, *yellow*, *green*, *livid*, and, also, the *black* Colours. Some think, that only the *pale*, *light-red*, and *yellow*, are proper to thin *Urine*; but it is certain, that the *green*, *livid*, and *black*, are sometimes observed in *Urine* of a thin Consistence, as, for Instance, in the Cases of *Herophon*, the Wife of *Epicrates*, and *Meton*, observed by *Hippocrates*, 1 *Epid. Aegr.* 3. 5. 7. Of *Meton*, he says, "that his "*Urine* was thin and blackish." It cannot, however, be denied, that *black Urine* is commonly thick; but the *pale*, *light-red*, and *yellow*, are never voided thick, but are constantly thin; for these Colours are imputed to a Want of Matter.

With respect to *Perspicuity*, or *Obscureness*, in the second place, some *Urines* are *clear* and *lucid*, others *turbid* and *obscure*, and of those which are voided clear some remain so, others, in a little time, become foul or turbid; in the same manner, of *Urines* excreted turbid some continue so, others, by a Subsiding of the gross Matter, become clear.

With respect to *Smell*, also, in the last place, some *Urines* are *fetid*, others not.

Urines, as was said, are distinguished, thirdly, with respect to their *Quantity*, for sometimes the Excretions are copious, sometimes small, sometimes moderate, and, on some Occasions, wholly intercepted.

The last Distinction mentioned of *Urines* regards the *Contents*; and under this Head may be observed a Multitude of Differences in *Urine*. We call the *Contents of Urine* that Substance which appears in any manner separated from the Body of the *Urine*, and is observed sometimes on its Superficies, sometimes in the Middle of the Vessel, and sometimes at the Bottom. This last the *Greeks* call *Hypostasis*, and we (the *Latins*) *Subsidentia*, *Residentia*, *Sedimenta*, and *Subjecta* (the *Hypostasis*, Settlement or Sediment, which subsides to the Bottom of the Urinal). When the *Contents*, or separated Corpuscles, occupy the Middle of the Vessel, they are called by the *Greeks Enæcremata*, and by the *Latins Sublimationes*, *Suspensa*, *Sublimia*, and *Sublimamenta* (the *Enæorema*, or pendulous Substance in the Middle of the *Urine*, see ENÆOREMA). If the *Contents* appear on the Superficies of the *Urine*, they take the Name of *Nubes* and *Nubeculæ*, "*Clouds* and *Mists*, or Films." Under the Head of *Hypostasis*, or *Sediment*, may be reduced a Variety of subordinate Distinctions; for some *Hypostases* are thick, others thin, some continuous, others discrete, or incoherent, and not at all united, but unequally dispersed through the Substance of the *Urine*. They are, also, distinguished into *white-pale*, *yellow-pale*, or *deep-red*, *green*, *livid* and *black*, and into *fetid* and *not fetid*. Again, of *thick* Sediments, some consist of crude and gross pituitous Humours, others are of a melancholic, or black adust, and others, to name no more, of a red and sanguineous, Consistence. These *thick* Sediments, or *Hypostases*, appear, also, of various Forms; some appear in the Shape of Grains, and are for that Reason called by the *Greeks Oroboides*; sometimes they shew like Scales, and have the Name of *Petaloides*; sometimes like Bran, narrower but thicker than the scaly Sort, and take the Appellation of *Pityroides*; and, in the last place, these Hypostases sometimes resemble a kind of Meal, and are hence called by the *Greeks Cnimnodes*; and like these last, in Appearance, are the purulent *Urines*, which consist of Pus. Sometimes, also, there appears in the *Urine*, a thick, pituitous Substance, and a mucous Humour.

In the Enæoremata, or suspended Corpuscles, as, also, in the superficial Clouds, or Films, appear the same Varieties, with respect to Continuity and Division, Equality and Inequality, Thickness and Thinness, Difference of Quantities, and Diversities of Colours, with those before ascribed to the Hypostases. But it is proper to the superficial *Contents* to consist sometimes of oily and pinguious Particles.

Of the different Causes of the URINE.

In treating on this Head, we shall begin with the *thick* and the *thin Urine*: The last Sort in Fevers always indicates a Weakness of Concoction, and is occasioned either from an Obstruction of the Blood-vessels, Ureters, Kidneys or Bladder, by which means only an ichorous, or thin serous Humidity is excreted, or when the Humours take their Course to the Head, as the Case is in Phrensies, where a *Thinness* of *Urine* is a common Symptom. Hence we conclude, that a *thin Urine* is excreted when nothing of the Humours happens to be mixed with it, and that a *thick Urine* is occasioned from a Mixture of something which is the Result of a Concoction attempted by Nature, or the Removal of some Obstruction. That a *thin Urine* in Fevers always signifies Crudeness we are taught by *Galen* in many Places; and *Hippocrates* 3 *Epid. Sect.* 3. *Stat. Pest.* speaking of epidemical burning Fevers, tells us, they were attended with "plentiful Excretions of *thin Urine*, which had "nothing critical, nor were of any Service to the Patient." This *Thinness* of the *Urine* sometimes continues, sometimes alters to *Thickness*: The latter shews, that Nature has begun its Work or Concoction; but the other indicates, that the Business is as yet unattempted, and is a Sign of an extraordinary Crudeness, as we are taught by *Galen*, *Lib. de Urinis*, *Cap.* 3.

Thick Urine is occasioned by a Mixture of *Humours*, and if it appears in the Beginning, indicates a Redundance of gross Humours, as we are told by *Galen*, *Lib. Quæsita in Hippocratem dicta*; but in the State or Height of the Disorder it shews, that Nature attempts an Excretion of the Humours.

Much Urine proceeds from plentiful Drinking, or a Redundance of Humidities, as in a Dropsy, and a Suppression of Evacuations by Stool in an humid State of the Belly, on which Occasion we are told by *Hippocrates*, 4 *Aph.* 82. "that copious Excretions of *Urine* by Night, are an Indica-"tion of small Discharges by Stool." An immoderate Quantity of *Urine* may be occasioned, also, by an Inflammation of the Kidneys attracting to themselves a vast Plenty of Humidi-

ties,

ties, as in the Diabetes, or from a Mutitude of Humours when the Patient undergoes a critical Expurgation by the Kidneys, as was the Caſe with many obſerved by *Hippocrates*, 3 *Epid. Sect.* 3.

Urine in too ſmall Quantities proceeds from contrary Cauſes, as from drinking but ſparingly, from a too plentiful Diſcharge of the Humidities by Stool or Sweat, or a Conſumption of them by an immoderate igneous Heat, as it uſually happens in burning Fevers, in which Caſes it is often totally ſuppreſſed. Sometimes, alſo, as it is well known, the *Urine* is excreted in ſmall Quantities from an Obſtruction of the Paſſages, by which it makes its Way through the Kidneys or Bladder.

As to the Cauſes of the *Colours* of *Urines*, we ſhall begin with the white *Urine*, which is either *thin* or *thick*. *White thick Urine*, as we are taught by *Galen*, indicates a Redundance of crude and groſs Humours, eſpecially what is excreted thick, and continues ſo. *Urine* of this Kind, in which nothing ſubſides, indicates an extraordinary Crudeneſs, and an extreme Weakneſs of the Faculty of Concoction. Hence ſuch *Urine* in acute Diſeaſes is pernicious, as it proved in the Caſes of the Wife of *Philinus*, and the Wife of *Dromeades*, 1 *Epid. Ægr.* 4. 11. But *Urine* of this Kind, which begins to grow thinner, ſhews that Nature has begun Concoction.

White thin Uriue, which *Galen*, *Com. in* 4 *Lib. Aph.* calls *aqueous Urine*, has for its Cauſes either a Weakneſs of the concoctive Faculty, as in old Perſons; or an Obſtruction of the Kidneys, as in nephritic Diſorders before the Stone is diſcharged; or an Obſtruction of the Liver; or, which often happens, a total Diverſion of the bilious Humour to the Brain; for which Reaſon ſuch *Urine* portends a Phrenſy, as *Galen* aſſures us, *Lib. de Urin. Cap.* 6. As this Kind of *Urine* indicates an highly crude State of the Diſeaſe, with an extreme Weakneſs of the concoctive Faculty, it is of all *Urines* the moſt pernicious, eſpecially in bilious Diſeaſes, as we are aſſured by *Galen*, 1 *Lib. de Criſibus*, *Cap.* 12. and *Com.* 2. *in Prognoſt. T.* 32.

The Cauſe of *pale Urine* is the Mixture of too ſmall a Quantity of the yellow Bile with the ſerous Humidities; but this Sort of *Urine* ſeems not far removed from a State of Concoction, provided it be not very thin.

Yellow, *light-red*, or *ſaffron-coloured Urine*, if *thin* at the ſame time, indicate the Diſeaſe to be in an abſolutely crude State, and the Viſcera affected with a violent burning Heat; but when *thick*, it is a Sign of Concoction, and ſometimes of a critical Excretion.

Red, and *reddiſh Urine* take their Colour from Blood, as we learn from *Galen*, *Lib. de Criſ.* and *Com.* 2. *in Prognoſt.* and more fully, *Com. in* 3. *Epid.* They are occaſioned by an Excretion of half-concocted Blood by the urinary Paſſages, and indicate, as he ſays in the Treatiſes juſt mentioned, a Redundance of an unconcocted and ſerous kind of Blood in the Veſſels, and the inner Parts of the Body; ſuch *Urine* is, alſo, an Indication to us of the Imbecillity of the ſecretive Faculty; whence *Hippocrates*, *Lib. Prognoſt.* tells us, that reddiſh *Urine* ſignifies a long Duration of the Diſorder, or that a long Space of Time is required for the due Concoction of the Blood. *Reddiſh*, *thin Urine*, though the Author of the Book *de Urinis* denies there is any ſuch *Urine*, is occaſioned by a ſlight Tincture of ichorous Blood; but the *thick* and *reddiſh* is from a Redundance of unconcocted Blood, as may be often obſerved in that burning Fever called a *Synochus*.

Reſembling the former is that *Urine* which is coloured with Blood, and called *bloody*, or *ſanguineous Urine*. Such Excretions are occaſioned from the infirm State of the Kidneys, and a Relaxation of the Veſſels which terminate in thoſe Parts, called an *Anaſtomoſis*, or a Relaxation of the Ducts which lie between the firſt and ſecond Sinus; from ſuch Cauſes proceeded the *bloody Urine* diſcharged by *Apemantus* and the Carpenter, mentioned by *Hippocrates*, 4 *Epid. T.* 19. Sometimes a Diſcharge of Blood is occaſioned by a Rupture or Aperture of the Veins, or an Ulceration of the Kidneys or Bladder, as we may learn from *Hippocrates*, 4 *Aph.* 86. where he ſays, "If Blood, "or Pus, or Scales, are excreted by *Urine*, and this *Urine* has, "alſo, a fetid Smell, the ſame indicates an Ulceration of the "Bladder;" and *ibid.* 77. "A ſudden [ἀπὸ ταὐτομάτου, ſpon-"taneouſly, ſee AUTOMATOS] Diſcharge of Blood by Urine, "indicates a Rupture of ſome ſmall Vein in the Kidneys."

Green Urine is either from porraceous Bile, generated in the Stomach, as *Galen* ſays, from the Crudeneſs of the Humours, or elſe from an æruginous Humour in the Veſſels, which owes its Original, according to the ſame Author, *Com.* 2. *in Prognoſt.* to a burning Heat, and vehement Aduſtion of yellow Bile. In Perſons who are in Health, or free from a Fever, ſuch *Urine* is generally a Sign of porraceous Bile; but in acute Fevers and Inflammations of the Viſcera, it indicates an æruginous and bilious Humour, according to *Galen*, *Lib.* 2. *de Crit.* where he determines this Colour in particular to proceed from an Alteration of yellow Bile, by the Force of a burning Heat, into Bile of a black Colour.

Next in Colour to *green* is *oily Urine*, which however is not fat, or pinguious; but as *Galen*, *Com. in* 3 *Epid. T.* 72. and *de Criſibus*, deſcribes it, reſembles Oil in Colour and Conſiſtence; and this Sort of *Urine*, as he tells us, he had ſometimes obſerved, proceeding from a Concoction of the Diſeaſe, without any bad Conſequence to the Patient.

But *pinguious*, or *fat Urines*, which by their Fatneſs reſemble Oil, or are called *oily*, becauſe, like Oil, they ſwim on the Superficies, have quite another Cauſe, as proceeding always from a Colliquation of the Fat, either of the whole Body, or only of the Kidneys. To this Purpoſe we read in 7 *Aph.* 35. that "a pinguious and compact Hypoſtaſis indicates an acute Diſ-"order of the Kidneys." And we may know, ſays *Galen*, in his Comment on that Aphoriſm, when there is a Colliquation in the whole Body from the feveriſh Heat, if it were only by an Excretion of Fat with the *Urine* ſucceſſively, and not all at once, as in a Colliquation only of the Kidneys. Hence we conclude, that there are two Sorts of *oily Urine*; one, which in Colour and Conſiſtence only appears very like Oil, and another, which is of a pinguious Subſtance, and which *Hippocrates*, in the Aphoriſms before-mentioned, ſays, contains Fat. Of this latter Sort of *oily Urine*, he ſays, in his *Prognoſtics*, "If there be a Fatneſs on the Superficies reſem-"bling a Spider's Web, it is to be condemned, for it is a Sign "of a Colliquation." *Galen*, *de Sanit. tuend.* tells us, that this Fat ſwimming on *Urine*, is like that which concretes on the Superficies of Broths when cooled. And, *Lib. de Urinis*, a Treatiſe aſcribed to him, he makes three Diſtinctions of this kind of fat or *oily Urine*; the firſt is what the *Greeks* call *Elæochroos*, which is of the Colour of Oil, and indicates a beginning Colliquation; the ſecond is called *Elæophanes*; this has a more exquiſite Mixture of oily Particles, and ſhews that the Colliquation increaſes; the laſt is the *Elæodes*, which in its whole Subſtance, and in all reſpects reſembles Oil, and ſhews the laſt Degree, or Height, of a Colliquation. But the ſame Author, *Com. in* 3 *Epid.* 72. makes two Kinds of *oily Urine*, one like Oil in Colour and Thickneſs, but void of Fatneſs; another Fat, of which there are two Sorts, one with a Fatneſs ſwimming atop, like the Eyes of Oxen, called by the *Greeks Elæophanes*; and another, which has its Superficies covered with a fat Subſtance reſembling a Spider's Web, and is called *Elæodes*. All theſe Kinds of *oily*, or more properly, *pinguious Urine*, proceed from a Colliquation of the Fat by an igneous Heat, as was before obſerved.

Urine of a *livid* Colour proceeds from an immoderate Coldneſs, according to *Galen*, *de Criſ. Lib.* 1, *Cap.* 12. and is therefore pernicious in acute Diſtempers, as indicating an Extinction of the natural Heat. It is however ſometimes occaſioned by a groſs, livid Matter, and on that account not deny'd by *Hippocrates* to be good, and ſometimes critical.

Black Urine is either the Effect of an immoderate Coldneſs (though in that Caſe it may more properly be ſtyled *obſcure* than *black*), or of a burning Heat. *Galen*, *Com. in* 1 *Prorrh.* tells us, that *black Urine* is occaſioned by a Mixture of black Bile with the Serum, which tinges the *Urine* with a black Colour; and *Com. in* 3 *Epid.* he ſays, that it proceeds from a melancholic Blood, which like Soot, communicates its Colour to the Serum. Hence, *Lib.* 1. *de Criſ. Cap.* 12. he ſays, that *black Urine* is a Sign of a Redundance of black Bile, or aduſt Blood in the Body. But here we are to make a Diſtinction of this Kind of *Urine* into thoſe of a thick and a thin Conſiſtence.

Thick black Urine always derives its Colour from a more than ordinary copious Excretion of a groſs atrabilious Humour, or black Bile, or aduſt Blood, whence in Quartans, and Diſorders proceeding from the Spleen and Melancholy, a thick and black Kind of *Urine* is evacuated.

A *thin* and *black Urine*, *Galen*, *Com.* 2. *in Prognoſt.* and *Lib.* 1. *de Criſ.* ſuppoſes to proceed either from exceſſive Coldneſs, which occaſions, alſo, a Blackneſs of the Blood, or from an immoderate Heat ſcorching the Blood. We know and can predict theſe Kinds of *Urine*, becauſe they are preceded by *Urine* of a yellow, light-red, or ſaffron-colour; livid *Urine*, alſo, changes to *black*.

We ſhould next in Order, after *black Urine*, treat of the Cauſes of *clear* and *foul*, or *turbid Urine*. As for *clear Urine*, which is permanent, or continues in a State of Clearneſs, it is included in what has been ſaid of the Colours of Urine in its thin Conſiſtence, and therefore we are to treat only of ſuch Urine as is excreted *clear*, but after ſome time becomes *turbid*. This Kind of Urine every one knows to be crude, and to become foul and diſturbed from a Redundance of groſs Flatulences, and conſequently it is regarded by every Phyſician of the leaſt Experience, as an Indication of Nature's Efforts toward a Concoction.

coction. *Galen, de Sanit. tuend. Lib.* 4. *Cap.* 4. ſays, "If "the *Urine* be excreted pure and clear, but is immediately diſ- "turb'd, it ſhews that Nature ſets about the Concoction of "the crude Juices; if the *Urine* becomes not foul immedi- "ately, but after ſome time, it is a Sign that Nature has not "yet begun its Work, but will attempt it hereafter." The ſame Author, *Com. in* 3 *Epid. in* 4 *Aph. & Lib.* 4. *de Sanit. tuend. & Lib.* 1. *de Criſ.* makes three Sorts of *turbid Urine*; one excreted clear, and becoming *turbid* afterwards, of which we now ſpeak; another excreted *turbid*, and becoming clear; and a third which is excreted *turbid*, and always remains in that State. This laſt is by Phyſicians generally call'd *Subjugalis*, with reference to Horſes *ſub jugo*, "under the Yoke," or us'd to draw; becauſe in Colour, Thickneſs, and Foulneſs, it reſembles the *Urine* of a working Horſe. Such Sort of *Urine* proceeds from crude and groſs Humours agitated by Heat, and an Elevation of numerous Flatulencies thence occaſion'd, which mix with the Serum, and render it confus'd and turbid. For this Reaſon *Hippocrates*, 4 *Aph. Cap.* 9. ſays, "That *turbid* "*Urine*, like that of Horſes, in Fevers, indicates a preſent "or future *Cephalalgia*;" as it is a Sign to us, he means, that Multitudes of Vapours are elevated and convey'd to the Head. *Galen, Com.* 5. *in* 6 *Epid. T.* 15. ſays, "that *turbid Urine*, "like that of Horſes, is proper to thoſe who abound with crude "Humours, which are put in a State of Fuſion by the Heat." By this means, being converted into a ſpirituous Kind of Subſtance, they furniſh Plenty of Matter for flatuous Exhalations to the Head. *Turbid Urine*, then, we find, proceeds from crude and groſs Humours agitated by Heat.

Turbid Urine, which becomes clear, is, from the natural Heat, employed in Concoction; but *Urine* always remaining in a *turbid* State is generally the Effect of a febrile Heat agitating and confounding the Maſs of Blood, and is ſuch as we ſee in the Beginning of malignant Fevers, when Nature has done nothing towards a Concoction. *Avicenna*, and the other *Arabian* Phyſicians, tell us, that *turbid Urine*, which never ſettles, foreſhews an Ebullition of the Humours, on account of the Violence of an extraneous Heat, and the Weakneſs and Indiſpoſition of the natural Heat towards a Concoction. But *Galen, de Criſ. Lib.* 1. *Cap.* 12. ſays, that *Urine* remaining *turbid*, without becoming in the leaſt clear, indicates that Nature has begun an Agitation in the Blood, and is in full Vigour and Strength, ſufficient for Concoction; but that *Urine* excreted clear, and ſoon after becoming *turbid*, ſignifies that the Agitation of the Humours towards a Concoction is not yet begun, but may be expected. For theſe Reaſons, he prefers that Kind of *turbid Urine*, which always remains in that State, becauſe they indicate a beginning Concoction, as he more clearly expreſſes it, *de Sanit. tuend. Lib.* 4. *Cap.* 4. where he ſays, that "*Urine foul*, or *turbid*, like that of Horſes, indicates a Re- "pletion of the Veins with ſuch Humours as are called crude; "but that Nature, however, ceaſes not from her Work, but "powerfully concocts them."

And of *Urine* which becomes *turbid* after Excretion, he there adds, "If it be voided pure, and immediately turns foul, it "ſhews that Nature attempts a Concoction; but if it grows "*turbid* at ſome Diſtance of Time, it is a Sign that Nature is "not at preſent, but will ſhortly be, employed in that Work." A little after he ſeems to aſſert the contrary, when he ſays, "If there be no Separation, or what ſubſides is bad, it ſhews "that Nature is weak, and wants Aſſiſtance in concocting the "Juices." Upon the Whole, it muſt be ſaid, that *turbid Urine* continuing in that State, is ſometimes the Effect of an extraneous Heat agitating the whole Maſs of Blood, and ſometimes proceeds from the natural Heat, or Nature itſelf employ'd in Concoction; and that in the latter Caſe it is diſtinguiſhed from the other by its not appearing in the Beginning, but in the Increaſe of a Diſorder, when Nature manifeſtly attempts a Concoction; after which the *Urine* has a Sediment, or becomes leſs *turbid*, the Strength not much impair'd, and the Diſeaſe is free from mortal Signs: And this perhaps is no more than what *Galen* means in the Chapter above quoted, by the following Words: "Of all *turbid Urines*, let the general Character be a Sepa- "ration of the *thick* from the more *liquid* Part, which is either "quick or ſlow, or none at all. If it be quick and imme- "diate, and what ſubſides be white, ſmooth, and equal, it "ſhews Nature far ſuperior to the Juices which it concocts; "but if what ſubſides be bad, Imbecillity of Nature is ſigni- "fied." If then ſuch *turbid Urine* appears, as we ſaid, in the Beginning of a Diſorder, at which Seaſon Nature attempts no Concoction, on account of the Ebullition and Agitation of the extraneous and febrile Heat, it indicates a Turbation from a Redundance of crude and groſs Humours put in a State of Fuſion by the vehement Heat, which, in Conjunction with the Violence of the Diſtemper, and the extreme Weakneſs of the Patient, may be juſtly eſteemed a fatal Prognoſtic. *Galen*, therefore, might well ſay, *Com. in* 4 *Aph. T.* 70. "*Turbid Urine*, which

"comes to no Settlement, if the Patient be ſtrong, ſhews the "Diſeaſe will be of long Duration; if weak, that it will be "mortal." *Urine*, then, which appears *turbid*, and continues ſo in the Beginning of a Diſeaſe, proceeds not from the natural, but an extraneous Heat, which is confirmed by the Weakneſs of the Patient, and ſome pernicious concomitant Sign, and from its having nothing of a laudable Sediment.

We have ſpoken largely of the Cauſes of *turbid Urine*, and would treat, in a few Words, of the Origin and Cauſe of *pungent Urine*, or ſuch as is excreted with Pain, and a pungent Senſation: This, in ſhort, proceeds from highly-acrimonious and hot Humours, which are voided together with the *Urine*, and, according to *Hippocrates*, 1 *Epid. Sect.* 2. are the Occaſion of a Strangury. And *Galen*, *Com. in* 1 *Epid.* to the ſame Purpoſe, tells us, "that when the excrementitious Parts of the "whole Body are purged off by the Paſſages of the Kidneys, "the Patient is ſeized with a Strangury, as well upon other "Accounts, as principally from the Acrimony of the confluent "*Urine*;" this Acrimony is the Effect of an immoderate Degree of Heat.

Fetid Urine is known by every Body to be the Effect of an extraordinary Putridneſs either in the Veſſels, or the Kidneys, or the Bladder.

As to *Urines* of an equal and unequal Conſiſtence, *Galen*, *Com. in* 7 *Aph. T.* 33. makes the following Remarks: "If we "take the Word διεστικὸς (diſtant or ſeparate) in its proper "Senſe, the Thing is impoſſible; becauſe *Urine* is always con- "tinuous, without Interſtices; but if we underſtand by this "Term an Inequality of Subſtance or Conſiſtence, he (*Hip- "pocrates*) rightly ſays, that ſuch an Inequality indicates a ve- "hement Perturbation in the Body: For when Nature pre- "vails, and is predominant, all Things are equally united; "but when it is repelled and controlled by Variety of ſtubborn "and rebellious Matters, that Portion of them which is ſub- "dued and concocted, takes one Form; and what is renitent "and refractory, another; and when there is a great Variety "of theſe contumacious Particles, it ſhews the Inequality in "the *Urine* to be very conſiderable, as well as the Perturbation, "which is the Cauſe of it."

We have given you the Cauſes of the various Kinds of *Urine*, and proceed to treat of the Cauſes of its Contents; under which Head we are to inquire the Reaſons of thoſe Contents at the Bottom, which we call *Hypoſtaſes*, *Subſidences*, and *Sediments*; and what are the Cauſes of thoſe pendulous Contents in the Middle, which paſs by the Names of *Enæremata* and *Sublimamenta*; as, alſo, the Reaſons of the *Nubes* and *Nubeculæ*, or the Clouds and Films which ſwim on the Superficies of *Urine*.

In general, the Variety of Contents in *Urines* depends on the various Generation and Mixture of Flatuoſities; for when there is a Redundance of theſe in the *Urine*, the excrementitious Particles are conveyed to the Superficies; when there is but a moderate or ſmall Quantity of them, they make this Settlement in the Middle; and if there be none at all, they reſide at Bottom. Hence it is that an Hypoſtaſis indicates a good Concoction, in which the Flatuoſities, being diſcuſſed, cauſe no Perturbation. This, however, is no neceſſary Conſequence from the Contents being lodged at the Bottom, ſince not every Hypoſtaſis, or Sediment, infers, of Neceſſity, a Concoction, but that which is white, ſmooth, and equal at all Times, as we are taught by *Hippocrates*, in his *Prognoſtics*. Nor do *Clouds* and *Films* always ſignify Crudeneſs: For, as we are told by the ſame Author, in the Book juſt quoted, "Clouds on the Sur- "face of *Urine*, if white, are good." And *Galen*, *Lib.* 1. *de Criſ. Cap.* 12. tells us, that in Patients inured to Faſting and immoderate Labour, the Diſeaſe often has its Solution before any thing ſubſides in the *Urine*; and it is generally ſufficient if there be a white Cloud, and a white, ſmooth, and equal *Enærema*.

But white, ſmooth, and permanently equal Contents, in the Bottom of the Veſſel, or Urinal, conſtantly ſignify Concoction, an *Enærema* of that Kind a leſs Degree of Concoction; and a Cloud of the ſame Sort, as being ſituated higheſt of all, a ſtill leſſer Meaſure of Concoction of the Diſeaſe.

The Contents, or excrementitious Particles, elevated in the Form of a Circle, to the Superficies of the *Urine*, is a certain Indication of a *Delirium*, as was obſerved by the Author of 1 *Prorrhet.* and I have frequently found the Truth of it by Experience.

A copious *Sediment*, though it occupies the loweſt Place in the Urinal, indicates a Redundance of crude Humours, as *Galen*, *Lib.* 1. *de Criſ. Cap.* 12. has demonſtrated, from Examples of Children bred in Idleneſs, and pamper'd with full Diet, whoſe *Urine* abounds with Crudities, from a Repletion of the Body with crude Humours. And, *Com.* 2. *in Prognoſt.* he ſays, that there appears a copious *Sediment* in *Urine*, when the Diſeaſe is fomented by crude Humours; and that there is

very

very little or no *Sediment* in the *Urine* of thoſe who labour under bilious Diſeaſes, or are uſed to Faſting, and hard Labour.

A *thin Urine*, Sediment, or Hypoſtaſis, is a Sign of thin Humours; but a *pure* Hypoſtaſis, which ſcarce riſes upon ſhaking the Veſſel, ſhews a great Weakneſs of Nature in the ſecond Concoction.

Thick and *groſs Sediments* are, in like manner, Indications of groſs Humours, agreeably to what we are told by *Galen*, *Com. in 4 & 7 Lib. Aph.* and *Lib. de Plenitud.* where he ſays, that "the *Urine* of voracious Perſons has a thick Sediment." We affirm, therefore, that a groſs or thick Hypoſtaſis is an Indication of groſs Humours, and conſequently of difficult and troubleſome Diſorders.

An *united*, or *continuous*, and *equal Hypoſtaſis*, of a pyramidal Figure, is highly commended, as being a Sign of a very good Concoction; as, on the contrary, a *diſcrete* and *unequal Sediment*, or *Hypoſtaſis*, has a quite different Signification. *Galen*, *Lib.* 1. *de Criſ. Cap.* 12. For an *Hypoſtaſis* which is *unequal*, and *diſcrete*, or conſiſting of looſe and ſeparate Parts, ſhews a Redundance of groſs Flatuoſities in the Veins, which are incapable of being diſſolv'd and diſcuſs'd by Nature, as we are told by the Author of *Lib. de Urinis*.

As to the Colours of the Contents of *Urine*, *white*, as we ſaid, is judg'd the beſt, if the Matter be, alſo, continuous, ſmooth, and equal; and ſuch is the Reſult of a perfect Concoction.

Unequal diſcrete Contents are diſtinguiſh'd from an *Hypoſtaſis*, as making a Subſtance disjunct, or diſunited, and diſpers'd, like ſmall and minute Particles of Sand, through the Body of the *Urine*. Theſe are the Effects of a copious Phlegm, or proceed from Pus, or a Colliquation of the ſolid Parts; and of this Nature are the Contents reſembling coarſe Flour, and the *Hypoſtaſis* which the *Greeks* call *Crimnodes*.

Red and rediſh Contents ſignify Crudeneſs, and Want of Concoction; whence it is juſtly ſaid by *Hippocrates*, *Lib. Prognoſt.* "that rediſh *Urine*, with a rediſh and ſmooth Sediment, "ſhews the Diſeaſe to be of longer Duration than in the firſt "Caſe [where the Sediment is white, ſmooth, and equal]; "but is, however, very ſalutary." The Author of the Book of *Urines* ſays, that red Contents proceed from an ichorous Blood, and ſignify Want of Concoction.

Yellow and green Contents are bad, becauſe they ſhew, that the Diſeaſe is fomented by a yellow, æruginous, or porraceous Bile.

The worſt Colours in the Contents of *Urine* are the livid and the black. A livid Colour ſoon changing to black, proceeds from a Refrigeration of Heat; and a yellow, light-red, or green Colour, quickly altering into black, is the Effect of an igneous Heat burning the Humours. Juſtly, therefore, does *Hippocrates*, *Prognoſt.* pronounce black Clouds in *Urine* bad.

Of Contents in *Urine* which proceed from a Colliquation, and therefore appear in various Shapes, thoſe *Hypoſtaſes* which are call'd by the *Greeks Oroboides*, becauſe they reſemble the Pulſe *Orobus*, and, alſo, *Sandarachoides*, are the Effects of a beginning Conſumption of the Fleſh after the Fat is conſum'd; and are Indications of a Colliquation either of the whole Body, or of the Kidneys.

The Contents, or *Hypoſtaſes*, call'd, in *Greek*, *Petaloides*, that is, ſquamous, or ſcaly, appear, according to *Galen*, when, after a Colliquation of the Fat and Fleſh, the ſuperficial Parts are abraded by the igneous Heat.

The *Pityroides*, or *furfuraceous Hypoſtaſes*, which are narrower and ſtraiter, but yet thicker, than the ſcaly Sort, are the Effects of a Dilaceration and Conſumption of the Veſſels of the ſolid Parts by the igneous Heat.

In the laſt Place, the Contents or *Hypoſtaſes* call'd *Crimnoides*, which are like coarſe Meal, or Flour, proceed from a Conſumption of the ſolid Parts more violent than the former: Of theſe Kinds of *Hypoſtaſes*, we find *Hippocrates* paſſing his Judgment, *Lib. Prognoſt.* in the following Words: "If the "*Hypoſtaſis* of the *Urine* be *Crimnoides* [like coarſe Flour], it "is bad; but the *Petaloides* [reſembling Scales] are worſe; "the white and thin is very bad, but the *Pityroides* [furfu-"raceous] is ſtill worſe." Here *Galen*, in his Comment on the Place, tells us, that theſe Kinds of *Urine* are the Effects of an igneous Heat ſcorching the Blood, or conſuming the Fleſh in an unequal manner.

Of good URINES, *portending Recovery.*

Urine, as well as other Excretions, affords Indications in Diſeaſes for a *Prognoſis* of Death or Recovery, two Ways: Firſt, as it is a Sign of Concoction and Malignity; and, ſecondly, as it is a Cauſe, in diſcovering itſelf to be a good or bad Excretion. Of *Urine* portending a good Event, in both theſe Reſpects, we find *Galen*, *de Criſ. Cap.* 12. and *Com. in* 3 *Epid.* giving the following Deſcription: "The beſt Kind of *Urine* is what is of "a moderate Conſiſtence, anſwering in Proportion to the "Quantity of Drink, of a lightiſh Red, or yellowiſh Colour, "with a white, ſmooth, and equal Sediment, or *Hypoſtaſis*." "The beſt *Urine*, ſays *Hippocrates*, *Lib. Prognoſt.* is what has "a white, ſmooth, and equal Sediment, during all the time "before the Criſis; for this ſignifies that the Patient is in a ſafe "State, and that the Diſeaſe will not be of long Duration: "But if there be an Intermiſſion, and the *Urine* be ſometimes "pure, and ſometimes with a white and ſmooth *Hypoſtaſis*, the "Diſeaſe will be the longer, and the Patient the leſs ſecure." *Galen* adds, "The *Urine* ought to be of a moderately ſaffron "Colour, and of a mean Conſiſtence between thin and aqueous; "and thick like that of Horſes." The ſame Author, *Lib.* 1. *de Criſibus*, *Cap.* 12. ſays, "that the beſt *Urine* is rather of a "lightiſh-red, than yellowiſh Colour:" And *Com. in* 1 *Epid.* and *Lib.* 10. *Simpl.* he makes it moderately yellow; and *Lib.* 2. *de Sanit. tuend. Cap.* 2. he ſays, "that a lightiſh-red and "bilious *Urine*, is an Indication of a perfect Concoction in "Diſeaſes."

In many Caſes concocted *Urine* has but little Colour; in others it is more deeply tinged; whence it appears, that the beſt *Urine* is not always obſerv'd to be of the ſame Colour. The divine *Hippocrates* was of Opinion, that we were not ſo much to regard the Colour or Conſiſtence of *Urine*, as its Contents, in order to a *Prognoſis*; ſince, in the Place juſt quoted, where he deſcribes the beſt *Urine*, he ſays not a Word of the Colour and Subſtance, but only of the Contents: For he tells us, that "the beſt *Urine* is what has a white, ſmooth, and equal Sedi-"ment," omitting the Colour and Subſtance, which are not obſerv'd to be always the ſame in ſuch an *Hypoſtaſis*. And though, indeed, it be neceſſary for the *Urine*, when furniſh'd with the beſt *Hypoſtaſis*, to be of the beſt Colour, and of a moderate Conſiſtence, and in temperate Bodies ſuch Colours are uſually obſerv'd, as before deſcrib'd, and reputed laudable, yet as there is a vaſt Variety in *Urine* with reſpect to the various Conſtitutions and Diſpoſitions of Bodies, we are to have recourſe to a general Method for diſcovering the beſt Kind of *Urine* in all particular Caſes. Here we are well directed by *Ariſtotle*, *Lib.* 1. *Probl. T.* 52. "The beſt *Urine*, he ſays, is moderate "in all Reſpects, and moſt like that of the Perſon in Health; "which is a Precept to be regarded by the young and unex-"perienced Phyſician, in his Inſpection of *Urine*; in which, "when he ſees any Alteration from what it was in a State of "Health, he may ſafely pronounce the Perſon to whom it be-"longs fallen from a perfect State of Health and Soundneſs." This of *Ariſtotle* is certainly a good Rule for judging of good and bad *Urine*, ſince the Theory of *Similars* and *Diſſimilars* is one of the chief Principles of the Art of *Progneſticating*. Upon theſe Conſiderations we, alſo, conclude, that in Diſeaſes ſuch *Urine* is to be eſteem'd the beſt, as approaches neareſt to the *Urine* of the Patient in Health; and this is the Character which *Galen*, alſo, has given of it, *Lib.* 1. *de Criſ. Cap.* 12.

But, for our clearer and more exact *Diagnoſis* of the beſt *Urine*, we are attentively to conſider the Temperament of the Body and *Viſcera*, with the Age, Sex, Diet, and Way of Living, of the Patient: For the *Urine* of Bodies of an hot Temperament is of an higher than ordinary Colour; and the *Urine* of Perſons of a cold Temperament, of a lower Colour than is conſiſtent with Mediocrity. In reſpect of Age, young adult Perſons make thinner *Urine*, and more colour'd than Children; and the *Urine* of Children is thicker than ordinary, as that of old Perſons is thinner, and more colourleſs. With regard to Sex, the *Urine* of Women is thicker, and more colourleſs, than that of Men, and more abounds with Contents: In other Reſpects, the *Urine* of voracious Perſons abounds with crude Sediments; on the contrary, the *Urine* of thoſe who are us'd to Faſting has but little Sediment, and is more coloured than the former; and the ſame Appearance in the *Urine* is effected by Watchings and Fatigue; whereas the *Urine* of thoſe who live in Idleneſs abounds with Sediment, and is leſs colour'd.

Hence we conclude, that in Children the beſt *Urine* is what appears of a thickiſh Conſiſtence, is but ſlightly tinged, and abounds with a copious, white, ſmooth, and conſtantly equal *Hypoſtaſis*. In Youth and Manhood the *Urine* ought to be more deeply tinged, and of a yellowiſh or lightiſh-red Colour, and of a thinner Conſiſtence, with fewer Contents, and ſo much the thinner, and more colour'd, as the Body is of an hotter Temperament; and ſo much the leſs colour'd, as the Temperament of the Perſon is colder. In Women the *Urine*, on ſome Occaſions, muſt be thicker, and more colourleſs, than ordinary; in Perſons under Circumſtances of Faſting, Fatigue, and Watching, higher colour'd, and thinner, with fewer Contents; and in thoſe who indulge themſelves in plentiful Living, and Idleneſs, the *Urine* muſt be expected leſs colour'd, of a thicker Conſiſtence, and with a more copious Sediment.

But in Bodies of a moderate Temperament the beſt *Urine* is, as *Galen* ſays, of a moderately croceous Colour, of a mean Conſiſtence, anſwering in Quantity to the Drink, with a white,

white, ſmooth, and conſtantly-equal Sediment, and, in ſhort, moſt reſembling the *Urine* of Perſons in Health. In all Caſes the beſt *Urine* has a white and equal *Hypoſtaſis*, or Sediment; *Urine* with a pendulous Subſtance, or *Enæorema*, is not ſo good, and that with a Cloud, or Film, worſe than the former. We are, however, taught by *Galen*, *Com. in* 3 *Epid.* that an *Enæorema* is ſometimes good; and that even a Cloud may be good enough to prove a ſalutary *Prognoſtic*, according to *Hippocrates*, 4 *Aph.* 70. where we read, that "Perſons in whom the Fever "comes to a Criſis on the ſeventh Day, have a red Cloud in "their *Urine* on the fourth Day, and other Things in Propor-"tion." And not only a red Cloud, ſays *Galen*, which was not ſeen before, prognoſticates a Criſis; but a white Cloud much more; and a white, equal, and ſettled *Enæorema*, more than either: But if the Diſeaſe be very quick in Motion, and there be a Change in the Colour and Conſiſtence of the *Urine*, there are ſufficient Grounds for prognoſticating an approaching Criſis. *Hippocrates*, *Lib. Prognoſt.* ſays, that "a Cloud floating in the "*Urine*, if white, is good." And a little after, "we are to "conſider in theſe Clouds, whether they move upwards or "downwards, and, alſo, what Colour they are of; for if they "tend downwards, and are of the Colour above-mention'd "[white], they are good, and laudable."

With reſpect to the Subſtance, *Urine* of a thin Conſiſtence, with a good Colour, is laudable. Hence *Galen*, *Com. in* 1 *Epid.* ſays, "It is plain that thin *Urines*, but of a good Colour, pro-"miſe a Recovery on account of the Goodneſs of their Co-"lour; but, in reſpect only of their Thinneſs, they require a "longer time for Concoction." So that this Kind of *Urine* prognoſticates, indeed, a Recovery, but it is after a conſiderable time; as it happen'd in the Caſes of *Cleonactides* and the *Clazomenian*, 1 *Epid. Ægr.* 6. 10. and *Chærion*, 3 *Epid. Sect.* 1. *Ægr.* 5.

Thin and colourleſs *Urine*, where there are Signs of Recovery, indicate an Abſceſs, as we are taught by *Hippocrates*, *Lib. Prognoſt.* quoted by *Galen*, *Com.* 1. *in* 3 *Epid. T.* 4. to this Purpoſe: "Thin and equal *Urines*, he ſays, excreted for a long time "together, if there be other ſalutary Signs, indicate an Ab-"ſceſs in the Parts below the Diaphragm." Thus it happen'd to *Pythion*, 3 *Epid. Ægr.* 1. who liv'd near the Temple of *Tellus*, of whom it is ſaid, "From the firſt to the eighth Day "his *Urine* was thin, and colourleſs, and had a cloudy *Enæ-*"*orema*; on the tenth he fell into a Sweat, his Spit was "ſomewhat concocted, and he had a Criſis, about which time "he voided a thinniſh [for ὑπόλευκα, as all the printed Editions "have it, I read ὑπόλεπτα] *Urine*." On the fortieth Day after the Criſis, a Suppuration appear'd in the Parts about the Anus, and the Abſceſs produc'd a Strangury.

Of Colours in *Urine*, the laudable, as we ſaid, are the yellowiſh, lightiſh-red, ſubcroceous, or ſomewhat ſaffron-like Colour, the moderately pale and ſubluteous Colour. The reddiſh *Urine*, with a rediſh Sediment, is ſaid, by *Hippocrates*, to be ſalutary, though it indicates a long Diſeaſe; the black Colour in *Urine* is not always bad; it is not ſo, for Inſtance, in Diſorders of the Spleen, as appears in the Caſe of *Herophon*, 1 *Epid. Ægr.* 3. and in thoſe who abound with melancholic Blood; and the ſame is agreeable to what *Galen*, *Com. in Epid.* remarks of a female Patient, where he ſays, "that the Colour of her "*Urine*, though black, indicated no Danger, becauſe pro-"ceeding from a Retention of the Menſes, which were of "a more melancholic Caſt." Plenty, alſo, of black *Urine*, which changes not to aqueous critically excreted, is of Service. Hence *Galen*, *Com.* 3. *in* 3 *Epid. T.* 73. ſays, he knew a Woman who was very much reliev'd by a plentiful Excretion of ſuch Kind of *Urine*; beſides, black *Urine* with a plentiful Hæmorrhage from the Noſtrils, as in the Caſe of *Meton*, 1 *Epid. Ægr.* 7. or a copious Flux of the Menſes, as was obſerv'd of the moroſe Woman, 3 *Epid. Sect.* 3. *Ægr.* 11. are not in the leaſt to be dreaded.

Of turbid, or foul Kinds of *Urine*, what ſoon ſettles or ſubſides is good, eſpecially if the Sediment be white, ſmooth, and equal, according to *Galen*, *de Sanit. tuend. Lib.* 4. *Cap.* 4. where he writes, "that if there appears a Separation of the "thicker from the more liquid Subſtance in the *Urine*, and what "ſubſides is white, ſmooth, and equal, it indicates a Superio-"rity of Nature in ſubduing and concocting the Juice."

Clear *Urine*, which ſoon becomes turbid, may, alſo, be eſteem'd beneficial, as it ſignifies, that Nature is at work in concocting the Humours.

With regard to Alterations in *Urine*, thoſe are eſteem'd laudable which are made for the better, either in Colour, Conſiſtence, or *Hypoſtaſis*. Hence thick *Urine*, excreted after the Beginning of a Diſeaſe, is accounted beneficial, ſince Excretions, after the Commencement of a Concoction, become thick, if they were thin before; as, on the other hand, when from thick they change to thin, it is a very good Sign; agreeably to the Doctrine of *Hippocrates*, 4 *Aph.* 68. where we read, "that

"they who void a thick, grumous Urine, and in ſmall Quan-"tities, and are not free from a Fever, are reliev'd by a ſuper-"vening plentiful Excretion of thin Urine, which is moſt likely "to happen when there has been an *Hypoſtaſis* in the Urine "from the Beginning, or not long after." Here *Galen*, in his Comment, ſays, "that Plenty of thin Urine is beneficial, as it "indicates the morbific Matter to be more attenuated."

It is beſt for Urine, from turbid to become clear, from colourleſs to grow colour'd, from too high a Colour to become leſs colour'd, and from wanting Contents to aſſume either a Cloud, *Enæorema*, or *Hypoſtaſis*, which are white and equal.

Such, then, are the Properties and Qualifications of Urine, by which it indicates a Recovery in acute Diſeaſes, as it is a Sign of Concoction; in the ſame manner it portends a good Event as a Cauſe in ſhewing itſelf to be a ſalutary Evacuation.

For this Reaſon, Plenty of Urine excreted on a critical Day, indicates a ſalutary Criſis, and with the greater Certainty, if it be in its own Nature of a laudable Kind, as it was in the Caſe of *Nicodemus*, 3 *Epid. Sect.* 3. *Ægr.* 10. of whom *Hippocrates* obſerves, 3 *Epid. Sect.* 3. "that on the twenty-fourth Day he "voided much white Urine, which had a copious *Hypoſtaſis*; "and he fell into a plentiful hot Sweat, underwent a Criſis, "and was freed from his Fever." And of *Pericles*, *ibid. Ægr.* 6. he ſays, "On the third Day his Fever was abated, and he "voided Plenty of concocted Urine, with a copious Sediment." *Chærion*, alſo, *ibid. Sect.* 2. *Ægr.* 5. is ſaid to eſcape, by the Benefit of a copious Effuſion of bilious Urine. To the ſame Purpoſe we read, 4 *Aph.* 73. "that where an Abſceſs is ex-"pected in the Joints, the ſame is prevented by an Evacuation "of much thick and white Urine." And, 6 *Epid. Sect.* 4. *Aph.* 2. "that an Evacuation of thick white Urine, ſuch as "happen'd to the Servant of *Archigenes*, ſometimes happens in "Quartans attended with a Laſſitude, and prevents an Abſceſs." But that Kind of thick Urine which reſembles coarſe Meal, portends Death, or a long Duration of the Diſeaſe; as we are taught by *Galen*, *Com. in* 7 *Aph.* 31.

Acrid Urine, evacuated with Pain, and in great Quantity, frequently happens to be critical in acute Diſeaſes, agreeably to the Obſervation of *Hippocrates*, 1 *Epid. Sect.* 1. where, after deſcribing an epidemic Diſorder very fatal to Children, he ſays, "that the only ſerviceable, and moſt important of all the Judi-"cations, and by which many eſcap'd the greateſt Danger, "was, an Alteration of the Diſeaſe to a kind of Strangury, "and Abſceſſes in the Parts affected." And a little after, "with regard to the Strangury, it was tedious, and very trou-"bleſome to the Patient; the Urine, in this Caſe, was co-"pious, thick, various, red, mix'd with Pus, and excreted "with Pain." To which he adds, "All who were in this Cir-"cumſtance recover'd, and not one of them, as far as I know, "dy'd." The Caſe of *Python*, 3 *Epid. Ægr.* 1. which was much of the ſame Nature, had probably the ſame happy Event; of whom we read, that "on the fortieth Day after a Criſis, a "Suppuration was form'd about the *Anus*, and converted it-"ſelf into a Strangury;" after which, it is probable that he recover'd by the Benefit of copious Evacuations by Urine.

There are ſome Kinds of oily Urine, not fat, but reſembling Oil only in Colour and Conſiſtence, which are, alſo, ſalutary; theſe never happen but from a perfect Concoction of the Diſeaſe, and have been ſeveral times obſerv'd by *Galen*, as he ſays, *Com. in* 3 *Epid. T.* 72. from a Concoction of the Diſeaſe, without any Detriment to the Patient. And ſo much for good Urines, which are of ſalutary Prognoſtication.

Of bad URINE, *which portends Death.*

Thin, white, aqueous Urine, of long Continuance, in a Diſeaſe not of a favourable Kind, is deſtructive, as we are aſſur'd by *Galen*, becauſe it indicates a very high Degree of Crudeneſs; and it is no leſs pernicious in acute Fevers, becauſe, according to the ſame Author, it ſhews that the yellow Bile has its Courſe upwards, and is carry'd towards the Head, from whence we may predict a Delirium and Phrenſy. And ſuch Urine we find condemn'd by *Hippocrates*, 4 *Aph.* 72. where he ſays, "that white pellucid Urine is bad, eſpecially in a Phrenſy." And *Galen*, in his Comment on the Place, ſays, that he never knew one in a Phrenſy, from whom ſuch Excretions of Urine proceeded, recover. For it is much better, as the Diſeaſe is wholly of a bilious Nature, that the Urine ſhould appear bilious, and worſt of all that it ſhould be thin and tranſparent, as it was obſerv'd in *Philiſtes*, labouring under a mortal Phrenſy, 3 *Epid. Sect.* 2. *Ægr.* 4. We conclude hence, that thin and aqueous Urine, in all acute Fevers, is bad, as portending, at leaſt, a long Duration of the Diſorder, with Relapſes; for Nature requires a long time for the Concoction of Humours in ſo highly crude a State, when, if the Fever be not extremely violent, and the Strength not much exhauſted, the Patient has been ſometimes known, though after a long time, to recover.

but if the Diſeaſe be violent, and the Strength much impair'd, ſuch Urine is abſolutely fatal: And this is what *Galen* means, *Com. in 4 Aph.* 71. when he ſays, "If the Strength was before "exhauſted, ſuch white perſpicuous Urine is pernicious, as in "Phrenſies; in which Caſe we have no Inſtance of Recovery." We may add, as a ſtronger Confirmation of their Fatality, their long Continuance, and Appearance after the Beginning of the Diſorder, as it happen'd in the Caſe of the Woman who lay ill in *Thaſos*, 3 *Epid. Sect.* 3. *Ægr.* 2. who, on the eleventh Day, evacuated ſuch thin aqueous Urine, and continu'd ſo to do till the fortieth Day. We have already obſerv'd from *Hippocrates*, *Lib. Prognoſtic.* that a Continuance of ſuch Urine, with ſalutary Signs, prognoſticate, a Solution of the Diſeaſe by an Abſceſs, as it actually happen'd in the Caſe of *Pythion*, who liv'd near the Temple of *Tellus*, 3 *Epid. Ægr.* 1. and is demonſtrated by *Galen*, in his Comment on the Caſe. But, on the other hand, where are no ſalutary Signs to accompany it, a Continuance of ſuch Urine is always mortal. Hence *Hippocrates*, *Progno ſt.* pronounces aqueous Urine one of the moſt deſtructive Kinds, and worſt of all in Children.

Thick Urines, according to *Hippocrates*, in the ſame Book, are bad, eſpecially if they appear in the Beginning; at which time, as *Galen* will have it, *Comment. in 4 Aph.* 6. the Urine is generally thin: But thoſe Kinds of thick Urine which have either none, or a bad *Hypoſtaſis*, are very bad; and of theſe, *Galen*, *Com. in 4 Lib. Aph.* ſays, "thick Urine, without a Se-"diment, if the Strength be pretty entire, portends a long "Continuance of the Diſeaſe; but if the Strength be much "exhauſted, the Death of the Patient." And *Hippocrates*, 1 *Epid. Sect.* 1. deſcribing an epidemic Fever of the ſemitertian Kind, ſays, that "in ſome Subjects the Urine was thick, and "had but a ſmall *Hypoſtaſis*, and the ſame not of a due Con-"ſiſtence, but crude and unſeaſonable." *Galen*, alſo, 1 *Com. in 3 Epid. T.* 5. ſpeaking of theſe Kinds of Urine, ſays, that *Hippocrates*, in that Caſe of *Hermocrates*, by "hinting that his "Urine was thick, and without *Hypoſtaſis*, plainly intends, "that it was foul and turbid, as he here uſually calls that "Urine which always appear'd in a crude, diſturb'd State, and "impregnated with a flatulent Spirit, like Muſt." Since Urine, then, in which nothing ſubſides, is of the Number of turbid Urines, thick Urine, alſo, deſtitute of a Sediment, is to be eſteem'd a turbid Urine, which, ſays *Galen*, beſides indicating a flatulent and crude Perturbation of the whole Maſs of Blood, ſhews the Diſeaſe to be fomented by groſs Humours.

Having firſt obſerv'd, that turbid Urine may be either thin or thick, we proceed to inquire into the *Prognoſtics* which may be drawn from turbid Urine in acute Diſeaſes. *Galen*, as we before obſerv'd, makes three Sorts of turbid Urine; one voided thin and clear, and afterwards becoming foul and turbid; a ſecond voided turbid, and continuing in that State; and the laſt voided foul and turbid, and afterwards growing pure, and clear. Theſe laſt mention'd, *Galen*, *de Crif. Lib.* 1. *Cap.* 12. makes to have a leſs Degree of Pravity; becauſe it ſhews, that ſomething of an unequal Turbulency remains, and that the Diſeaſe will be concocted in a ſhort time. Worſe than the former is that kind of turbid Urine which is diſcharged clear, and becomes turbid afterwards; becauſe ſuch a poſterior Turbation ſignifies that Nature wants to begin its Work of Concoction of the Diſeaſe, but has not actually begun it; and therefore requires a longer time, and a good meaſure of Strength in the Patient, to perfect the Concoction. Of a mean Kind between the two former, according to *Galen*, is that Urine which is excreted turbid, and continues in a State of Turbation, without growing in the leaſt clear, or ſubſiding. And this Sort of turbid Urine, he ſays, indicates, that the Agitation in the Blood is ſtill promoted, in order to a Concoction. The ſame Author, *de Sanit. tuend. Lib.* 4. *Cap.* 4. tells us, that "if the Urine appears turbid, like "that of Horſes, it ſhews the Veins to be replete with what "they call crude Humours; but that Nature, however, is not "idle, but hard at work in concocting them." Hence it appears, that turbid Urine, which becomes not clear, nor ſubſides, is better than ſuch Urine as is excreted clear, and afterwards becomes turbid. This Diſtinction, however, *Hippocrates* ſeems not to be ſenſible of, ſince he no-where ſays that this laſt mention'd is of worſe Signification than the other; but condemns, in general, thoſe Kinds of turbid Urine which never ſubſide, nor grow clear, more than the others; and pronounces them pernicious. Thus it prov'd, for Inſtance, in the Caſe of the Wife of *Philinus*, 1 *Epid. Ægr.* 4. who dy'd; of whom it is ſaid, "Under her Convulſions great Quantities of Urine "came from her, for the moſt part, involuntarily; white, "thick, like what is diſturb'd by ſhaking, after long Settlement "in the Urinal; it did not ſubſide, but in Colour and Thick-"neſs was like the Urine of a Horſe; ſuch was the Na-"ture of her Urine, ſays *Hippocrates*, as far as it appear'd to "me." And of the Wife of *Dromeades*, another fatal Inſtance, we read, *ibid. Ægr.* 11. "that the Day after ſhe was "ſeiz'd with a Rigor ſhe had a commodious Evacuation by "Stool; that her Urine was thick, white, turbid, like Urine "agitated after long Settlement, and did not ſubſide." The ſame turbid, and not ſubſiding Urine, was obſerv'd in the Man who, "being in a feveriſh State, made a Supper, and drank "freely;" 1 *Epid. Ægr.* 12. and in *Hermocrates*, 3 *Epid. Sect.* 1. *Ægr.* 2. who both died of acute Fevers. *Galen*, alſo, ſeems to aſſert the ſame *Prognoſis* from turbid Urine, in his Comment on 4 *Aph.* 70. where he ſays, "Some Sorts of Urine "remain turbid for a long time, others ſoon acquire a thick "Sediment, and ſignify a quick Solution of the Diſorder; but "turbid Urine in which nothing ſubſides, if the Patient be "ſtrong, ſhews the long Duration of the Diſeaſe; if weak, "Death." And *de Sanit. tuend. Lib.* 4. *Cap.* 2. he gives us his Deſcription and Judgment of theſe turbid Kinds of Urine, in ſo clear a manner, that we may from thence conclude this kind of turbid Urine to be more pernicious than the reſt. "Of "all turbid Urine, he ſays, the general Mark or Character by "which it is judg'd, is a Separation of the thicker and groſſer "from the thinner and more liquid Subſtance; and this Sepa-"ration is effected in a quick or ſlow manner, or not at all; "if the Separation be quick, and what ſubſides be white, "ſmooth, and equal, it ſhews that Nature has the Dominion "over the Juices, and concocts them. If the *Hypoſtaſis* be "good, but acquir'd at ſome conſiderable Diſtance of time, it "prognoſticates that Nature will prevail over the Juices in "Length of time. But if there be either no Separation at all, "or what ſubſides is bad, it indicates that Nature is weak, and "wants Aſſiſtance in concocting the Juices."

We conclude, then, from the Premiſes, that turbid Urine, in which nothing ſubſides, is more pernicious than other Urine of that kind. The ſame may be demonſtrated from the Rule of Contraries: For ſince *Galen* himſelf confeſſes, that turbid Urine, which collects an *Hypoſtaſis*, is good, and ſignifies that Nature will overcome the Diſeaſe; the contrary Urine, therefore, which is deſtitute of all Sediment, and always remains turbid, muſt have a contrary Signification, and portend that the Diſeaſe will prevail over Nature: For turbid Urines, alſo, not to grow clear, indicates their Turbation to proceed not from the natural Heat employ'd in Concoction, but from ſome extraneous and preternatural Heat working the Ruin of the Patient. For turbid Urine, which acquires that Property from the natural Heat, terminates in Clearneſs; but turbid Urine which is the Effect of a Turbation by the febrile Heat, always remains turbid, and collects either none, or a bad *Hypoſtaſis*.

Moreover, among the Kinds of turbid Urine, what remains turbid in the Beginning of a Diſeaſe, is worſe than the like happening in the Increaſe; at which time the natural Heat is employ'd in Concoction, and often cauſes a Turbation in the Urine by filling it with Flatulencies; but in that Caſe the Urine in a little time depoſites a good Sediment, and becomes clear.

As to that kind of foul or turbid Urine which is evacuated clear, and becomes turbid afterwards, whether it has a greater Degree of Pravity than the other Kinds of turbid Urine, as *Galen*, *de Crif. Lib.* 1. *Cap.* 12. will have it, I am not perfectly ſatisfy'd: For if by Urine becoming turbid after Evacuation, it be ſignify'd, as he there, and *Lib.* 4. *de Sanit. tuend. Cap.* 4. tells us, that Nature has not indeed yet begun, but is preparing to ſet about its Work of Concoction; and that by turbid Urine growing clear, it be indicated, that Nature has actually begun a Concoction; it ſeems to follow, that turbid Urine, depoſiting no Sediment, is the moſt pernicious, at leaſt in acute Diſorders, and is juſtly indeed ſo eſteem'd, ſince it indicates the Preſence of a Multitude of crude and groſs Humours, which requires a long time for Nature to concoct and ſubdue; and a great meaſure of Strength is, alſo, neceſſary, for ſuch a Work. Hence, in weak Bodies, and violent Diſorders, ſuch Urine portends Death.

With reſpect to the Colours of Urine, the white, thin, and aqueous, in acute Diſeaſes, are the worſt, becauſe, as we learn from *Galen*, it is beſt, in bilious Diſeaſes, for the Urine and Excrements to appear pretty much colour'd. *Hippocrates*, *Lib. Prognoſt.* condemns the thin and fiery red Urine, as "indicating the Diſ-"eaſe to be in an abſolutely crude State; and that if it contin-"nues long, it is to be fear'd the Patient will not be able to ſup-"port himſelf till the Urine be concocted." And ſuch is its *Prognoſis*, becauſe a thin and fiery-red Urine is a Sign of a violent Diſeaſe, and an internal burning Heat, or vehement Inflammation, either in the Liver, Stomach, or Diaphragm.

In Inflammations of the internal Parts, and in acute Fevers, gold-colour'd Urine, of long Continuance, is very much to be ſuſpected, becauſe it indicates a high Phlegmon, or Inflammation, in ſome one or other of the Viſcera.

Black Urine, in acute Diſorders, is always attended with Danger, unleſs it be critically excreted, or flows in a copious manner, under a Suppreſſion of atrabilious Menſes, or a plentiful Hæmorrhage from the Noſe. In what Caſes black Urine is not

to be dreaded we have ſhewed before; but in acute Diſeaſes, if not excreted under the Circumſtances before-mentioned, it imports Danger, as indicating Plenty of aduſt Blood, which it will be difficult for Nature to concoct. For this Reaſon *Hippocrates*, *Prognoſt.* pronounces *black Urine* more deſtructive than the *thin* and *fiery red*, and worſt in adult Perſons; on the ſame Account he condemns black Clouds floating in *Urine* as a pernicious Sign.

Thin black Urine, excreted in ſmall Quantities, 1 *Epid. Sect.* 2. *Stat.* 3. was one of the Symptoms which attended the Beginning of a very mortal epidemic *Cauſus*, or burning Fever, and portended a fatal Event.

Black Urine changing to *aqueous*, as in the Woman who lay ill near the cold Water, 3 *Epid. Sect.* 3. *Ægr.* 2. is deſtructive. Of her it is obſerved by *Hippocrates*, that on the eleventh Day ſhe voided Plenty of *thin black Urine*, and on the twentieth great Quantities of *aqueous Urine* flow'd from her; on which *Galen*, in his Commentary, obſerves, that *black Urine* changed to *aqueous* is a mortal Sign. The Author of 1 *Prorrh. T.* 4. writes, that "in Perſons under Perturbations and "Watchings, colourleſs *Urine*, with a black Enæorema, is phre-"nitic," that is, prognoſticates a Phrenſy; and we may ſay, a Phrenſy of a malignant and mortal Nature, becauſe proceeding from a black and aduſt Bile.

Black and *fetid Urine* is obſerved by *Galen*, *Comment. in Aph.* and *Com.* 2. *in Prognoſt. T.* 32. to be deſtructive. And continually *black*, *thin*, and *aqueous Urine*, with bad Signs, portend Death, as it happened in the Caſe of the Woman, 3 *Epid.* before-mentioned, of whom it is ſaid by *Hippocrates*, at the End of his Account, that "her Urine was perpetually *black*, "*thin*, and *aqueous*, attended with a Coma, Loathing, De-"ſpondency, Watching, Proneneſs to Anger, Anxiety, and "melancholy Diſorders of Mind."

But the worſt of all is *black Urine* with a *black Sediment*. On this Kind of *Urine*, *Galen* paſſes his Judgment, *Lib.* 1. *de Criſibus*, *Cap.* 12. in the following Words: "Worſt of all, "he ſays, is *Urine* black in its whole Subſtance, and I never "knew one Perſon recover after voiding ſuch *Urine*; but it is "leſs pernicious if what ſubſides of it only be black, and leſs "ſo ſtill, if no more than what floats in the Middle (the Enæ-"orema) be black, and much leſs pernicious than this laſt, is a "Cloud only of that Colour."

Oily Kinds of *Urine*, particularly ſuch as have a Fatneſs on the Surface, reſembling a Spider's Web, are condemned by *Hippocrates* in his *Prognoſtics*; and *Galen*, *Lib.* 4. *de Sanit. tuend.* ſays, they are pernicious, as indicating a Colliquation. Of *Pythion*, 3 *Epid. Sect.* 3. *Ægr.* 3. who lay ill near the Temple of *Hercules*, it is ſaid, that "he voided an *oily* Kind of "*Urine*." Next to *black*, *oily Urine* is the worſt, becauſe it is a Sign of an extraordinary Colliquation, and that the igneous and febrile Effluation prevails over the natural Heat, as it did, for Inſtance, in the aforeſaid *Pythion*, and the Woman of *Cyzicus*, *ibid. Ægr.* 14. who both voided firſt *black*, and ſoon after *oily*, or *fat Urine*.

No leſs pernicious is a *fat* Kind of *Urine* ſucceeding a *thick*, *turbid Urine*, which depoſits no Sediment, becauſe it ſignifies, that the igneous or febrile Heat, which firſt excited the Turbation, is not only undiminiſhed, but very much increaſed. Such was the Circumſtance of the *Urine* obſerved by *Hippocrates* in the Caſe of the Wife of *Dromeades*, and of him, who being feveriſh, ſupped and drank freely, 1 *Epid. Ægr.* 11. 12. In the latter Caſe the Patient on the firſt Day voided *red*, *thick*, *turbid Urine*, which depoſited no Sediment; on the fifth and ſeventh he excreted great Quantities of a *fat*, *oleous Urine*, and died on the eleventh Day of his Illneſs. In the other Inſtance, "the *Urine* on the ſecond and third Day was *thick*, "*turbid*, and had no Hypoſtaſis; on the fourth and fifth oily, "and on the ſixth the Patient died."

In like manner Plenty of *thin* aqueous *Urine* without Contents, no way relieving the Patient, or vitious in any manner, in acute Diſorders is very much to be dreaded. Thus *Hippocrates*, 3 *Epid. Sect.* 3. *Stat. peſt.* deſcribing the Symptoms of an epidemic *Cauſus* generally attended with a Phrenſy, and very mortal, tells us, that the Patients excreted "great Quan-"tities of *thin Urine*, which were of no Service, nor had any "Relation to a Criſis." And afterwards, ſpeaking of the ſame Subjects, he ſays, "The *Urine* was in vaſt Quantities, and not "in proportion to the Drink, but far exceeding it; and it had "beſides an extraordinary Degree of Pravity, being neither "thick nor concocted, nor duly purged." The ſame Author, 3 *Epid. Sect.* 2. *Ægr.* 12. relating the mortal Caſe of the Woman who lay ill *in Foro Mendacium*, ſays, that on the tenth Day ſhe voided great Quantities of *Urine*, which had no Hypoſtaſis. And of the ſick Woman by the cold Waters, he ſays, that her *Urine* was always much in Quantity, black, thin, and aqueous.

Much thick, or *turbid Urine*, not ſubſiding, and no way beneficial is, alſo, very much condemned, as are generally all great Quantities of *Urine* in the Beginning of acute Diſtempers, being juſtly eſteemed of no Service, becauſe at that Time nothing concocted can be excreted, nor any good Purgation be made.

Thin Urines in ſmall Quantities, under burning Fevers, and acute Inflammations, are very bad, as indicating the Serum of the Blood to be conſumed by the fiery Heat, and if the *Urine* has beſides any manner of Pravity, it is ſo much the worſe, as it proved in the Caſes of the Wife of *Dromeades* before mentioned, the young Man of *Melibœa*, 3 *Epid. Ægr. ult.* and the Virgin Daughter of *Euryanactes*, 3 *Epid. Sect.* 2. *Ægr.* 6. in the two laſt of which the *Urine* was little, thin, and not of a good Colour; and in the firſt Caſe the *Urine* was little, thin, and oily. And in the Caſes of the Woman who lived with *Tiſamenus*, and another Woman who belonged to the Family of *Pantimides*, 3 *Epid. Sect.* 2. *Ægr.* 9. 10. the *Urine* was obſerved to be thin, and in ſmall Quantities. All theſe Patients before mentioned died in a ſhort time after the Appearance of this Symptom which we are ſpeaking of.

An utter Suppreſſion of *Urine* from a total Conſumption of the ſerous Humidities of the Blood by the igneous and febrile Heat, or from an Extinction of all the Functions, as *Galen* expreſſes it, *Com.* 2. *in* 3 *Epid. T.* 4. is a fatal Prognoſtic in Fevers. Of *Silenus*, who lay ſick of a mortal Fever, 1 *Epid. Ægr.* 2. *Hippocrates* obſerves, that "On the ſixth Day his "*Urine* ſtopped, and that on the ſeventh he made no Water; "but that on the eighth he made Water in ſmall Quantities "with Pain and a pungent Senſation." This is an Indication to us of a vehement Heat conſuming the Serum of the Blood, and rendering it highly hot and acrimonious. In the Woman of *Cyzicus*, 3 *Epid. Sect.* 3. *Ægr.* 14. the Woman who was a Domeſtic of *Ariſtion*, and lay ill of a Quinſey, *ibid. Sect.* 2. *Ægr.* 7. and the young Man of *Melibœa* before-mentioned, there was a Suppreſſion of *Urine* a little before their Deceaſe from an Extinction of the Faculty.

Urine little in Quantity, acrid, and of no Benefit to the Patient is, alſo, mortal, as it is a Sign, that all the ſerous Humidity is conſumed by the burning Heat which affects the internal Parts, and that the Humours are inflamed; and it was obſerved by *Hippocrates* of *Silenus*, that before his Death he voided a ſmall Quantity of pungent acrid *Urine*. And I have myſelf, ſays *Proſper Alpinus*, obſerved theſe ſmall Excretions of highly acrid and vellicating *Urine* in my beloved Wife *Guadagnina*, and ſeveral others, labouring under a mortal burning Fever, a little before their Deceaſe.

Urine void of Contents, and having neither Hypoſtaſis, Enæorema, nor Cloud, is bad, unleſs it be occaſioned through Faſting, Fatigue, Watching, or an highly bilious State of Body, in which Circumſtances it is a bad Sign for the *Urine* to appear without Contents, as we are taught by *Galen*, *de Criſ. Lib.* 1. *Cap.* 4.

Thick Urine, without a Sediment, in acute Diſtempers, is affirmed by *Galen* to be mortal.

Urine with a *ſmall* or a *crude* Sediment is bad: Such was that obſerved by *Hippocrates*, 1 *Epid. Sect.* 1. in thoſe who laboured under an epidemic Kind of ſemitertian Fever. "The "*Urine*, he ſays, was thin, unconcocted, colourleſs, and lit-"tle in Quantity, or elſe thick, with a ſmall Hypoſtaſis, of "no laudable Conſtitution, and depoſiting a crude and un-"ſeaſonable Sediment."

Galen, *Com. in* 4 *Aph.* 69. condemns *thick Urine* on account of the Heavineſs of its Sediment; and the Author of the Book *de Urinis*, *Cap.* 42. tells us, that ſometimes a white and crude Humour is excreted with the *Urine*, and ſubſides to the Bottom like a good Hypoſtaſis. And *Galen*, *Com.* 2. *in Prognoſt.* ſays, that a copious and crude Sediment is an Indication that the Diſeaſe is fomented by a Multitude of crude Humours, and by that means rendered difficult and dangerous; for the ſame Reaſon he abſolutely condemns a thick and groſs Hypoſtaſis, *Com in* 4 *Aph.* 69. Of ſuch an Hypoſtaſis is *Hippocrates* to be underſtood, 7 *Aph.* 31. where he ſays, "That an Hypoſta-"ſis with a branny Sediment (*Crimnodes*) in Fevers, indicates "that the Diſeaſe will be of long Continuance." We have already obſerved from *Galen*, *Lib.* 1. *de Criſ. Cap.* 12. that thoſe thick Sediments, which the *Greeks* call *Crimnodes*, ſignify a great Colliquation, and therefore in acute Diſeaſes are mortal. The ſame Author, *Com. in* 7 *Aph.* 31. ſpeaking of thoſe Sediments, he ſays, "It appears then by theſe Examples "[*Silenus*, and the ſick Man in the Garden of *Dealces*] that "whenever Patients void an *Urine* with this branny Sediment, if "ever they recover, it is but very ſlowly; but if the Diſeaſe "be mortal, they die in a very ſhort time." *Galen* therefore pronounces ſuch *Urine* deſtructive, by hinting to us, that great Numbers whom it concerns, are deſtroy'd before the Diſeaſe is protracted to any conſiderable Length, and that whoever happen to eſcape, recover with much Difficulty, and not till after

undergoing a long and tedious Sickneſs; and for this very good Reaſon, becauſe ſuch a Diſpoſition as is the Cauſe of theſe Excretions by *Urine*, requires a vaſt deal of Concoction. *Hippocrates*, *Lib. Prognoſt.* highly condemns the *Crimnodes* Hypoſtaſis; ſuch an Hypoſtaſis had the *Urine* of *Silenus*, 1 *Epid. Ægr.* 2. who died on the eleventh Day; and that of the ſick Perſon in the Garden of *Dealces*, 3 *Epid. Sect.* 1. *Ægr.* 3. in whom the Diſeaſe came not to a perfect Criſis till the fortieth Day.

We have before obſerved, that the *Sediments* reſembling the Pulſe called *Orobus*, the *ſquamous*, or *ſcaly*, and the *furfuraceous*, which the *Greeks* call by the reſpective Names of *Oroboides*, *Petaloides*, and *Pityroides*, are mortal in acute Fevers, as proceeding from the ſame Colliquation, unleſs they are the Effects of ſome Diſeaſe in the Kidneys or Bladder. *Hippocrates*, in his *Prognoſtics*, paſſes his Judgment on all theſe Kinds of *Urine* in the following Words: "A *Crimnodes* (branny) "Hypoſtaſis in *Urine*, he ſays, is bad; but the *Petaloides* "(*ſquamous*) worſe; the white and the thin *Urine* have a con- "ſiderable Degree of Pravity; but the *Pityroides* (*furfura- "ceous*) is yet worſe." We know theſe Sediments are not the Effects of a Diſorder in the Kidneys from the Preſence of an actually incumbent, acute, and colliquating Fever, and the Appearance of no Sign by which we can judge the Kidneys to be injured.

A *looſe*, *diſcrete Sediment* is, alſo, diſapproved, as it indicates Crudity; and when an Hypoſtaſis of this Nature appears, we can never ſafely predict the Recovery of the Patient.

The ſame Judgment is to be paſſed on an *unequal Sediment*, according to *Hippocrates Prognoſt.* where we read, "If there "be an Intermiſſion, and the *Urine* be ſometimes excreted "pure, and at other times depoſites a white and ſmooth Hy- "poſtaſis, the Diſeaſe becomes the longer, and the Patient "the leſs ſecure."

A *reddiſh Sediment* is diſapproved by *Hippocrates*, *ibid.* becauſe, though it be in a good meaſure ſalutary, it indicates the Diſeaſe to be of long Duration. And the Author of the Book *de Urinis*, ſays, that a *reddiſh Sediment* ſhews a Defect of Concoction, but is no mortal Sign. A long Diſeaſe is however to be ſuſpected, and therefore ſuch a Sediment ſeems not free from Pravity, eſpecially in weak Bodies, and violent Diſeaſes, which ſoon exhauſt the natural Strength, and oftentimes before the Diſeaſe is concocted.

A *black Sediment*, or Hypoſtaſis, is very bad in acute Diſeaſes, and, if attended with black *Urine*, is affirmed by *Galen* to be the worſt of all Sediments; a black Enæorema is leſs pernicious, and a black Cloud leaſt of all the three.

Of *Enæoremas* the *ſublime* [μετέωρον] is diſapproved, as indicating a Delirium; an Inſtance of which we have in the Virgin of *Lariſſa*, 3 *Epid. Sect.* 3. *Ægr.* 12. where *Galen*, in his Commentary ſays, that this *Enæorema* ſignify'd a Delirium, not in itſelf, but by Accident, as it was an Indication of a flatuous Blood, ſince if there were no Flatuoſities in the Blood, the Enæorema would ſubſide to the Bottom of the Urinal. The Author of 1 *Prorrhet.* 4. 32. 37. makes a ſublime ſuſpended Subſtance in the *Urine* to portend a Delirium, and ſo much the more, ſays *Galen*, *Com.* 2. *in* 1 *Prorrhet. T.* 1. if it be attended with a Ringing of the Ears, or a Ceſſation of a Pain in the Hip, or ſome other inferior Part remote from the Viſcera.

A *black*, *looſe*, or *diſcrete* and *unequal Enæorema*, is bad; but not ſo bad as a Sediment of that Character, according to the Author of *Lib. de Urinis*, ſuppoſed to be *Galen*, *Cap.* 17.

A *black Cloud* is condemned by *Hippocrates*, *Lib. Prognoſt.* as is, alſo, a fat Subſtance ſwimming on the Surface of the *Urine*, becauſe it indicates a Conſumption. I have ſeveral times obſerved a Cloud of a circular Form elevated near the Surface in the *Urine* of thoſe who have died phrenitic, and thence concluded ſuch an Appearance to be a pernicious Sign in acute and turbulent Fevers. If therefore the Contents of the *Urine*, though conſtituted according to Nature, are by an undue Quantity of Spirit elevated to the Surface, it portends ſome Diſorder, and that no inconſiderable one, of the Head.

To the fore-mentioned Characters of *bad Urine* we may add, that Excretions of *Urine* not remembered, or not perceived by the Patients themſelves are, alſo, of bad Signification. Thus, 1 *Prorrhet.* 29. we read, that "a Flowing of *Urine* "from a ſick Perſon without his remembering it, is pernicious;" for it indicates, as *Galen* ſays in his Comment on the Place, a Deprivation of all Senſe of the natural Functions.

There remains one thing which highly deſerves our Remembrance on this Head, and is as follows: In many very deſtructive Fevers, the *Urine* in Colour, Subſtance, and Contents, appears like the *Urine* of Perſons in Health, and on that Account is eſteemed and pronounced laudable by the miſtaken and unexperienced Phyſicians, though at the ſame time it portends inevitable Death, by indicating to us that the Bile, by which

the *Urine* is coloured, has its Courſe wholly diverted upon the Brain, or one of the Viſcera, and that nothing of the noxious Humours is excreted with the *Urine*, which is obſerved by Phyſicians to be highly deſtructive in Phrenſies, and, alſo, in a Pleuriſy and Peripneumony. *Proſper Alpinus de Præſag. Vit. & Mort. Ægrot.*

URINACULUM. The URACHUS.

URINALIS HERBA. A Name for the LINARIA. *Elancard.*

URINARIUS. The ſame as URETICOS.

URNA. A Meaſure of Capacity among the *Romans*, derived, according to *Varro*, *ab urinando*, "from Diving," becauſe, as he ſays, *in aqua hauriendâ urinat*, *hoc eſt*, *mergitur ut Urinator*, "in drawing of Water it *dives*, or is immerg'd "like a *Diver*." It is the fortieth Part of the *Culeus*, and half of the *Amphora*, *Columella*, *Lib.* 3. *Cap.* 3. *Voluſius Metianus*, *Columella*, *ibid.* ſpeaks of Vineyards, which yielded ſix hundred *Urnæ* the *Jugerum*, which is at the Rate of above fifty-four Hogſheads and an half to our Acre. *Arbuthnot of Weights and Meaſures.*

UROCRISIA, or UROCRISIS, οὐροκρισία. The Judgment formed of Diſtempers by the Urine; from οὖρον, Urine, and κρίνω, to judge.

UROCRITERIUM. The ſame as UROCRISIA.

UROCRITICA. The Signs taken from Urine.

UROGALLUS, *J. Jonſt.* Tetrao. *Ariſtotel.* A Species of Pheaſant; there are two Kinds of this Bird, the great and the ſmall; the firſt is as big as a Turkey-cock, with a black Head, and ſhort Beak, a Neck almoſt a Foot long, and blackiſh and reddiſh Feathers; the ſecond, or ſmaller Sort, is called the *Mountain Pheaſant*. Theſe Birds live in Northern Countries, and are ſaid to keep themſelves for two or three Winter Months under the Snow; they are very good to eat.

Their Fat is emollient, reſolvent, ſtrengthening, and nervine. *Lemery des Drogues.*

UROMANTES, from οὖρον, Urine, and μάντις, a Prophet. A Water-caſter; or, in the vulgar Phraſe, a Piſs-Prophet.

UROMANTIA. The ſame as UROCRISIA.

URON, οὖρον, Urine. See RENES, and URINA.

UROPYGION. See ORRHOPYGION.

UROSCOPIUM. An Inſpection of the Urine.

URSUS. Offic. Schrod. 5. 312. Raii Synop. A. 171. Schw. Quad. 131. Aldrov. de Quad. Digit. 117. Jonſ. de Quad. 86. Charlt. Exer. 14. Geſn. de Quad. Digit. 941. THE BEAR.

The Parts of this Animal, which are uſed in Medicine, are the *Fat* and the *Gall*. The Fat is emollient and diſcuſſive, and is of principal Uſe in the Alopecia; it cures, alſo, Pains of the Gout, the Parotides, and other Tumors, and heals Ulcers in the Legs. The *Gall* is recommended to be taken inwardly for the Epilepſy, Aſthma, and Jaundice. Outwardly it is of Service in cancerous and ſpreading Ulcers, the Toothach, Dimneſs of Sight, and other like Diſeaſes. *Schroder.* The *Skin* is good for a Perſon bitten by a mad Dog to lie upon; and ſerves inſtead of a Rug to Travellers in the Winter-ſeaſon. *Schwenkfeld.*

URTICA.

The Characters are;

The Stalks are not branched. The Leaves on the Stalks grow oppoſite by Pairs, and are ſerrated, triangular, and in the *European* Kinds ſet with ſtinging Spines. The Flower is apetalous, ſtamineous, male, ſeated, for the moſt part, in a tetrapetaloidal cruciform Calyx, and having a Calyculе in the Middle. The Stamina are ſometimes four, ſometimes more, and the Teſticules are parted into foliaceous Planes. The Fruit generally grows on a Plant diſtinct from that which bears the Flower, and is either a bivalve Capſule, full of Seed, and conſiſting ſometimes of a Collection of Globules, or a Pincer-ſhaped Subſtance holding the Seed in its Gripe, and furniſhed with a filamentous Tube and Calyculе. There are found Ovaries, alſo, in the Male Plant; ſo that there are Male, Female, and Hermaphrodite *Urticæ* or Nettles.

Boerhaave mentions eight Sorts of *Urtica*; which are,

1. Urtica; maxima; racemoſa; Canadenſis. *H. R. Par.*

2. Urtica; urens; maxima. *C. B. P.* 232. *Tourn. Inſt.* 534. *Boerh. Ind. A.* 2. 105. *Urtica.* Offic. *Urtica racemifera major perennis.* Raii Synop. 54. *Urtica major vulgaris.* J. B. 3. 445. Raii Hiſt. 1. 160. *Urtica major vulgaris & media ſylveſtris.* Park. 440. *Urtica urens.* Ger. 570. Emac. 706. COMMON STINGING-NETTLE.

The common Stinging-nettle has a creeping ſpreading ſlender Root, full of Fibres, ſending forth ſquariſh Stalks, a Foot and an half, or two Feet high, having two oblong ſharp-pointed Leaves growing on long Foot-ſtalks, deeply ſerrated about the Edges, and covered, as well as the Stalks, with ſhort ſtinging Hairs, that cauſe a Burning and Itching in the Fleſh. The Flower-

are ſmall and ſtaminous, growing on long ſlender Bunches; ſome Plants bearing larger Flowers, and no Seed, and others ſmall round Seed, and ſmaller Flowers. They grow everywhere in too great Plenty. The Roots, Leaves, and Seed are uſed.

They are cooling and reſtringent. The Juice is good for all Kinds of inward Bleedings, Hæmorrhages, and Fluxes. A Tent dipt into it, ſtops the Bleeding of the Noſe, or of Wounds. The Root is diuretic, and are accounted a Specific for the Jaundice. The Seed is commended for Coughs, Shortneſs of Breath, and Obſtructions of the Lungs. *Miller's Bot. Off.*

The Leaves of this Species of Nettle have an inſipid, glutinous Taſte, and give no Tincture of Red to the blue Paper; the Roots ſtain it very little; they are inſipid alſo, but a little ſtyptic; from which we may conjecture, that the Nettles contain a Salt reſembling that which is naturally in the Earth, that is to ſay, compoſed of Sal Ammoniac, Nitre, and Marine Salt; but in theſe Plants it is clogged with a great deal of glutinous Phlegm, and united with abundance of Sulphur and terreſtrial Parts: For,

By the chymical Analyſis we obtain from the Nettles ſome volatile concrete Salt, a great deal of Sulphur and Earth, and ſeveral Liquors, which give a greater Indication of an acrid than an acid Salt; ſo that it is very likely, that the Phlegm of theſe Herbs is thickned rather by the terreſtrial Parts, than by the Acid: But this thick Phlegm, which is very conſiderable, is entirely deſtroyed by the Fire. Nevertheleſs, it is no Wonder, that the Nettles ſhould be deterſive, diuretic, and good to reſtore the Motion of the Fluids; for this glutinous Phlegm only moderates the great Activity of the acrid Salt, and of the Sulphur.

The Juice of Nettles depurated either of itſelf, or by gentle boiling it up, ſtops the Spitting of Blood, and the Flux of the Piles: It is very good for the Dyſentery and Fluor Albus. The Cataplaſm of Nettles is emollient and reſolvent, and conſequently good to diſſolve Tumors accompanied with an Inflammation; it relieves the Gout, and diſſipates ſometimes malignant Ulcers, and cold Tumors. The Leaves of Nettles may be taken after the manner of Tea, for the Stone and Gravel; ſome drink the Wine in which they have been infuſed. The Roots of Nettles preſerved with Sugar, procure Expectoration in an old Cough, Aſthma, and Pleuriſy, eſpecially if the Leaves be applied as a Cataplaſm upon that Side where the Patients feel their Pain: Some drink their Juice for the ſame Diſeaſes. The young Shoots of Nettles, taken in Broths, purify the Blood. The Conſerve of their Cluſters, and the Extract of the whole Plant, have the ſame Virtues. The Ptiſan of Nettles is very good in a malignant Fever, Small Pox, or Meaſles; Emulſions may be made with the Water and Seed of this Plant. *Martyn's Tournefort.*

All Nettles are diuretic and lithontriptic, and are ſaid to have a particular Antipathy to the *Cicuta*, and *Hyoſcyamus*. Eaten as a Green, they looſen the Belly, cleanſe the Kidneys, expel the Stone, and promote Expectoration, and the Eruption of the Meaſles. The good Wives in our Country uſe to gather the freſh Buds of Nettles, and the Leaves at their firſt coming forth in the Spring, and boil them in Broth, to purify the Blood. The Juice of the Herb, or a Syrup prepared of it, are very effectual in Spitting of Blood.

Take of the Juice of Nettles, four Ounces, for five or ſix Days together in the Morning faſting, and boil the Nettles in Broth. This Remedy has recovered thoſe who have been left by the Phyſicians.

A Woman who had a Bleeding from a Vein opened in her Stomach, which returned upon her at every new Cold or Indiſpoſition, found the ſame Medicine of moſt immediate Efficacy, when all others failed. The diſtilled Water, mixed with Spirit of Wine to a great Degree of Acidity, is admirably effectual in reſtraining an Hæmoptyſis. *Hier. Rehlingerus*, and *Udalricus Jungius*, two Perſons of Quality, who were both very ſubject to Hæmorrhages at the Noſe, uſed, as a never-failing Remedy, to take a Piece of the white, ligneous, and round Root of the Red Nettle, and put it up their Noſtrils, ſnuffing up ſome Water.

Externally it is of Service in putrid, gangrenous, and malignant Ulcers, and diſcuſſes Hardneſſes and Tumors, and repreſſes an Inflammation of the Uvula. The leſſer *Urtica* bruiſed, or the Juice of the ſame put up the Noſtrils, ſtop their Bleeding.

The Seed of the *Urtica*, eſpecially the *Roman* Kind, is of frequent Uſe in Affections of the Lungs, as the Aſthma, ſtubborn Coughs, the Pleuriſy, and Peripneumony. A Conſerve prepared of the Bunches of the Flowers and of the Seeds, is a moſt effectual Remedy in the Stone of the Kidneys, Affections of the Thorax, and Spitting of Blood. That the Seed of *Nettles* provokes Urine and the Menſes, and ſtimulates to Venery, is agreed by Phyſicians; whence it is commonly given by lewd Women to thoſe who addreſs them. The Root of the *great Nettle* is highly commended for the Jaundice; the ſame boiled in Wine and Honey, is an excellent Medicine in old Coughs, and an Orthopnœa.

For the burning Heat, Puſtules, and Itching, excited by *Nettles*, the Remedies are Oil of Olives, Oil of Roſes, the Juice of Tobacco, or a green Leaf of the ſame applied; and, to name no more, the expreſſed Juice of the Nettle itſelf, as *Parkinſon* tells us.

An immoderate Flux of the Hæmorrhoids, after all manner of Remedies try'd in vain, and the Patient was very much weakened, has been cured only by the Juice of *Nettles* depurated by a ſlight Ebullition, given to the Weight of two Ounces with a little Sugar. Examples of this have been collected from *Riverius*, and other practical Writers of Medicine, by Dr. *Tancred Robinſon*.

The People in my Country, ſays *S. Pauli*, know by certain Experience how to prevent the unſeaſonable Fermentation of their new Beer, and to defend it from the Thunder, by placing in their Veſſels a very large Stinging-nettle, with ſome Bits of Steel. *Raii Hiſt. Plant.*

3. Urtica; urens; minor. *C. B. P.* 232. *M. H.* 3. 435.

4. Urtica; urens; pilulas ferens; prima Dioſcoridis; ſemine Lini. *C. B. P.* 232. *Tourn. Inſt.* 434. *Boerh. Ind. A.* 2. 105. *Urtica Romana.* Offic. *Urtica pilulifera folio profundius Urticæ majoris in modum ſerrato, ſemine magno Lini.* Raii Synop. 54. *Urtica Romana.* Ger. 570. Emac. 706. Park. 440. Raii Hiſt. 1. 161. *Urtica Romana ſive mas cum globulis. J. B.* 3. 445. ROMAN NETTLE.

This Nettle has rounder Stalks, and darker-green Leaves, more deeply ſerrated, than the common Nettle; they are neither ſo large, rough, nor hairy, but full of ſmall ſhining Prickles, that are rather more ſtinging and burning than the common. Towards the Top of the Branches, from the Boſom of each Leaf, ariſes a round Ball on a long Foot-ſtalk, about as big as a Pea, and thick ſet with ſharp ſtinging Hairs, including ſeveral ſhining Seeds, in Shape like Linſeed. It grows in ſeveral Places of *England*, as about *Yarmouth*, and in *Romney-Marſh*; but it is not very common.

This is much of the ſame Nature with the common Nettle; but the Seed is reckoned more pectoral, and of greater Service againſt Coughs, and Affections of the Lungs; but is very ſeldom uſed. *Miller's Bot. Off.*

It grows in ſandy Places, and the Parts in Uſe are the orbicular, compreſſed, ſmooth, ſhining Seeds, which are of a blackiſh-red Colour, of a ſomewhat acrimonious Taſte, with a kind of Fineneſs. They are frequently uſed in pulmonary Affections, the Aſthma, ſtubborn Coughs, Pleuriſy, and Peripneumony. *Dale.*

5. Urtica; altera; pilulifera; Parietariæ foliis. *H. R. Par.* 131.

6. Urtica; Romana; facie Urticæ vulgaris.

7. Urtica; pilulifera; folio anguſtiori; caule viridi; Balearica. *Salvadore.*

8. Urtica; Americana; caule rubro; folio læte viridi; ſplendente. *Boerh. Ind. alt. Plant.*

The Nettle is called *Urtica, ab urendo*, "from burning," becauſe it is very burning when handled. The four firſt Species are furniſhed with ſmall, ſlender Spines, of ſo flexile a Nature at the Extremities, that when they enter the Skin they eaſily bend; but when they penetrate the Fleſh they cannot be drawn forth, but are there broken off as it were into Fragments, and excite an Inflammation and Veſicles, which continue till the Pieces are expelled.

The Decoction of the Leaves is aperitive, and commended againſt the Gout. The greeneſt and freſheſt Stalks are uſed to whip the Limbs affected with the Gout or Palſy, in order to excite an Inflammation in the external Parts. This Plant is of Service in Diſeaſes of the Kidneys and Bladder, Coughs, Phthiſis, internal Hæmorrhages, Hæmoptyſis, Vomiting of Blood, an immoderate Flux of the Hæmorrhoids, and bloody Urine. The Leaves bruiſed and applied, reſiſt a Gangrene, and a Decoction of them drank in the manner of Tea, is an excellent Laxative. *Hiſt Plant. adſcript. Boerhaav.*

URTICA ACULEATA. A Name for the *Cannabina*; *flore purpuraſcente*, and for the *Cannabina*; *flore albo.*

URTICA HERCULEA. A Name for the *Galeopſis*; *procerior*; *fœtida*; *ſpicata.*

URTICA INERS. A Name for ſeveral Sorts of *Lamium*; it is, alſo, a Name for the *Galeopſis*; *ſive Urtica iners*; *flore luteo.*

URTICA MORTUA. A Name for the *Galeopſis*; *lutea*; *amplioribus foliis*; *maculata.*

URTICA MARINA. Offic. Chalt. Exer. 68. Schonef. Icht. 77. *Urtica.* Joſ. Lang. 54. *Urtica marina* 5 & 6.

Rondeletii. C. B. P. 369. *Urtica rubra*. Rondel. 1. 530. Bellon. Aquat. 342. Geſn. 1039. Aldrov. Exang. 568. *Urticæ vel Pulmonis marini Species*. Mer. Pin. 194. SEA BLUBBER.

It ſwims on the Water, and is often caſt by the Tide on the Shore, being a round, compreſſed, pellucid Subſtance, reſembling a Jelly, with red Veins interſperſed. The Virtues are the ſame with thoſe of the *Lepus marinus*.

URTICATIO. A kind of chirurgical Operation, which conſiſts in ſtriking any Part of the Body with Nettles, in order to recall the natural Heat.

URUCU. See ACHIOTL.

URUCATU *Braſilienſibus*. *Maregr*.

This is a Plant which grows upon the Tree *Urucari-iba* without a Root; but it has four or five Leaves, which are broad beneath, and make an oval Bulb, about four Digits in Length, and containing a fat, medullary Subſtance, of the Appearance and Conſiſtence of a factitious Ointment, cold to the Touch, of a white Colour, inclining to green, and interſperſed with many fine whitiſh Filaments. Above the Bulb the Leaves part, and become narrow, but ſhoot up to a Foot or more in Height, wider above, Tongue-ſhaped, and green like thoſe of the Squill; every Leaf has three Fibres extended according to its Length. It bears neither Flower nor Fruit, and has no Smell, as neither has its Ointment.

This Ointment is cold, and eſteemed very proper and effectual for mitigating Pain; and is, alſo, found by Experience to induce a Sopor. *Raii Hiſt. Plant*.

URUCURI-IBA. See PALMA.

URUMENA, ὑρήμενα. The Urine, or Subſtances diſcharged together with the Urine.

URU-PARIBA. See GUIRA-PARIBA.

URUS. The wild Bull.

USFIDA. The Scoriæ of Gold. *Rulandus*.

USNEA CRANII HUMANI. Offic. *Muſcus ex Cranio Humano*. Ger. 1374. Emac. 1563. Park. 1313. *Muſcus Cranio Humano innatus*. *Uſnea Officinarum noſtratium*. Raii Synop. 36. MOSS OF A DEAD MAN'S SCULL.

They find it frequently in *Ireland*, whence it is imported to us. The whole Plant, which is in Uſe, is commended by very many Authors for Hæmorrhages; and is an Ingredient in that celebrated Compoſition called *Unguentum armarium*.

There are two Sorts of *Uſnea humana*; the firſt, which is uſed in our Shops, is imported from *Ireland*, and is nothing but a ſmaller Species of the *Muſcus vulgaris terreſtris Adianthi aurei Capitulis*, and differs not from the Moſs which grows to Stones and Trees, which it exactly reſembles, ſo as not to be diſtinguiſhed from it neither by Form nor Smell. Mr. *Doody*, an Apothecary of *London*, and a very good Botaniſt, has obſerved it growing to the Bones of Horſes and Oxen lying in the Fields.

The other Species is cruſtaceous, and grows to Sculls after the Manner of the *Lichen petræus*, and ſpreads itſelf. And this Sort is prefer'd by Authors to the preceding, as it is ſuppoſed to be endued with a peculiar Virtue of ſubduing and removing ſeveral Kinds of Diſeaſes. *Ephem. Germ. Raii Hiſt*.

This Species of Herb which adheres to the Sculls of Carcaſes expoſed to the Air, is by different Authors recommended as highly beneficial in various Diſeaſes. Thus it is extol'd as a Specific in Epilepſies, and all Diſorders of the Head, in Hæmorrhages produced by whatever Cauſe, and in Dyſenteries. It is uſed internally, externally, alone, mixed with other Subſtances, and as an Amulet. It is an Ingredient in the *Unguentum Armarium*, *Magneticum*, or *Sympatheticum*. In Hæmorrhages it produces its Effects, if only held in the Hand. Thus *Boyle*, in his Specifics, informs us, that he himſelf had an Hæmorrhage of the Noſe ſtopt by uſing it in this manner. *Juncker*, in *Therap*. informs us, that it renders the Body ſo impenetrable as not to be pierced with a Muſket-bullet. Some affirm, that the Virtues of that Uſnea are greater which has been gathered from the Sculls, during a certain Poſition of the Stars; when, for Inſtance, the Moon is in the Increaſe in the Houſe of *Venus*, when ſhe is in *Piſces*, *Taurus*, or *Libra*. Others affirm, that the Uſnea gathered from the Heads of hang'd Perſons is beſt: But *Paracelſus* aſſerts, that what is found on the Sculls of Perſons broken on the Wheel, is no leſs valuable: See *Schrod. Ph. Hoffman*, *Cl. Schrod. Boecler*. *Ettmuller*, *Helmont*, *Barbet*, *Med. Paulli Quadrip. Konig. Valent. Muſ. Hildan*. *Grube in Arcan. Med*. informs us, that thoſe who greatly extol the Uſnea in Medicine, ſuppoſe, that the vital and animal Spirits of the deceaſed Perſon are collected in it, and by a certain medicinal Force derived to any Part affected in a living Perſon: But as every one knows, that a Carcaſe has neither vital nor animal Spirits, thoſe ſeem to be in the right who give no Credit to the peculiar Power of this Plant, or its ſpecific Virtues in removing obſtinate Diſorders. *Junckerus*, in the Work already quoted, affirms, that the Virtues of

this Plant are founded on Credulity, or ſome other Error. Beſides, the Force of Imagination may be ſuppoſed to co-operate ſtrongly with this Medicine, as *Boyle*, *de Specific*. thinks; where he informs us, that if a certain Perſon, when Blood was taking from him, took Uſnea in his Hand for the ſake of Curioſity, the Blood ceaſed to flow till he laid it aſide again. *Marx*, the celebrated Dealer in Aromatics, in *Nurimberg*, does not heſitate to affirm, that the Uſnea of the humani Cranium is of no other Uſe but to be preſerved as a Rarity. And *Boecler* is of Opinion, that, as with the Bones of dead Bodies, ſo, alſo, with the Uſnea, many ſuperſtitious and impious things are done. But I am of Opinion, that in Hæmorrhages, where ſtyptic Tents, or Peſſaries, are expedient, the Uſnea mixed with other proper Ingredients, may produce happy Effects. Beſides, where exſiccant and aſtringent Medicines are proper, its Powder, whether uſed externally or internally, muſt certainly produce ſome Effect; for it is of a drying and aſtringent Nature. Thus I agree with *Pauli de Med. Corp. humi. Sect*. 8. where he ſpeaks in this Manner: "Though the Uſnea may "produce good Effects in Spittings of Blood, Hæmorrhages, "and other Fluxes; yet there is no Neceſſity why a Phyſi- "cian ſhould diſgrace his Profeſſion by preſcribing it, ſince "there are other Subſtances equally aſtringent, and which no "Patient will refuſe on account of the Horror and Nauſea "they produce." *Ettmuller* informs us, that ſome ſupply the Place of the true Uſnea with the Moſs of a Tile, which in Hæmorrhages of the Noſe, they immerſe in Vinegar, and apply to the Crown of the Head; whereas inſtead of the true Uſnea, which is rare, others uſe one of the artificial Kind, which they obtain in the following manner: They take the Moſs of large Meadow Stones, gathered in the Month of *April*; this, when gently dried, they reduce to a groſs Powder in a Glaſs Mortar, ſprinkling it with *Malmſey* Wine, or that of *Petrus Simon*, till it has acquired the Conſiſtence of a thick Poultice. Then with a Knife they ſpread this Preparation very thin on the Cranium of a Carcaſe broken on the Wheel. As it becomes gradually dry, they ſpread more of it on the Cranium, which in the open Air they expoſe to the Rays of the Sun, removing it when Rains come on. This they repeat till the Plant begins to flouriſh, and afterwards gather from it an Uſnea not inferior to that which grows ſpontaneouſly from the Scull. *Ludovici*, in *Pharm*. when treating of Vulneraries and Aſtringents, ſpeaks in the following manner: "Moſs may be every-where "found; and that obtained from the Oak, and the common "*Egyptian* Thorn, for medicinal Purpoſes, in Peſſaries for "Inſtance, Tents and Ointments are not inferior to the Uſnea, "gathered in the moſt ſuperſtitious manner, or even that grow- "ing in human Sculls." *Rieger*.

USRUB, or URSUB. Lead. *Rulandus*.

USTILAGO. Blighted Corn.

USTIO. Burning, either relative to the Simples of the *Materia Medica*; or to the chirurgical Application of the actual Cautery.

USTULATIO. The toaſting, or roaſting any moiſt Subſtance, in order to render it dry. It is, alſo, uſed with reſpect to Wine which is heated, or, as it is uſually expreſſed, burnt.

USUALIA MEDICAMENTA. Medicines which are in common Uſe.

USURAT. Tin. *Rulandus*.

UTERARIA. Uterine, or hyſteric Medicines.

UTERINUS FUROR.

The *Furor uterinus* is a Species of Madneſs proceeding from an ardent and inordinate Deſire of Coition; which deprives the Patient of the Uſe of Reaſon, ſo that ſhe ſpeaks all manner of obſcene Words, and abandoning all Shame invites, by all Sorts of immodeſt Geſtures and Expreſſions, the Men to venereal Embraces.

This immoderate Deſire of Copulation is produced by the Plenty, Acrimony, and Heat of the uterine Juices, exceeding the natural Bounds, and creating an extraordinary Turgency in the ſeminal Veſſels, which ſtimulating, and in a manner inflaming the genital Parts, excites a vehement and unruly Appetite to venereal Commerce. From the ſame Matter and Fomes aſcend Vapours to the Brain, which diſturb the Reaſon, and interrupt the Uſe of it, tho' indeed the furious Deſire of Coition alone, without the Aſſiſtance of Vapours, might very well be ſuppoſed to produce the ſame Effect, ſince all violent Paſſions are known to create the like Diſturbances in the Mind, and particularly an inordinate and extravagant *Love*, which has the Name of *Eroticus Affectus*. [See AMOR].

The Juices acquire theſe Qualities by long Retention in hot and ſalacious Bodies; for which Reaſon, this Affection is proper to Virgins, and young Widows, tho' it may poſſibly happen to young Wives, whoſe Huſbands are either impotent, or hated, and not qualified for a ſufficient Depletion of the Spermatic Veſſels, or ſatiating the venereal Deſires.

Some are of Opinion, alſo, that the Juices putrefy, and contract a malignant Quality, productive of thoſe ſevere Symptoms. But they will find it difficult to ſhew the Difference between the *Furor uterinus* and the *Hyſteric Paſſion*, which owes its Original to corrupted and malignant Juices. For the various Degrees of Putrefaction create different Degrees of Malignity, whence ariſes a great Variety of Symptoms; yet the manifeſt Qualities of the Juices, ſuch as its Redundance, Heat, Acrimony, and immoderate Turgeſcence, together with the exceſſive Heat of the genital Parts, are ſufficient to excite this Affection.

The Cauſes productive of this Diſorder are hot, copious, and acrimonious uterine Juices, Youth, a ſanguine and bilious Temperament, participating of an aduſt Quality, and atrabilious Food of bad Juice, rich and plentiful Living, and eſpecially ſpiced and high-ſeaſoned Diſhes, with the frequent Smell of Spices, as Nutmegs, Cubebs, and the like, long Sleep, and on ſoft Featherbeds, the Courtſhip and Careſſes of Lovers, the Reading of obſcene Books, Dancing, and other Pleaſures and Sports enjoy'd in Company with young Perſons.

The Diagnoſis of this Affection is eaſily formed from the Premiſes; but becauſe it comes on gradually, and by ſlow Steps, its Progreſs is to be explained. In the Beginning, while Reaſon is yet entire, the Patient becomes more ſad and ſilent than ordinary, has a wanton Caſt of the Eye, and a red Colour in the Face, which is heightened at Intervals, and eſpecially at the Relation of amorous Adventures; at which Time the Pulſe and Reſpiration are altered, through Sympathy of the Heart. Hence *Galen* boaſts, that he had diſcovered the mad and ungovernable Paſſion of Love in Women by the Pulſe, which ſuddenly alters, and beats in various Manners at the Sight, or recalling to Mind the beloved Object. In Proceſs of Time, as the Diſorder increaſes, ſhe begins to be quarrelſome, and to ſhed Tears, and now-and-then to burſt into Fits of Laughter, and to ſpeak many things inconſiſtent or indecent; from which, however, nothing certain can be inferred: After this ſhe repents, and is ſorry for what is paſt, till the Return of another Paroxyſm, which happens, according to the irregular Motion of the Matter, without any certain Period. When the Diſeaſe is arrived at its Height, the Patient invites the Men to venereal Commerce openly and in a public Manner, and talks of venereal Affairs in coarſe and common Terms, calling Things by their proper Names.

As to the Prognoſis, the Diſeaſe is curable if treated in Seaſon; but if ſuffered to continue for a conſiderable Time, till it has taken firm Root, it degenerates at laſt into a true Mania.

There is great Hope of Recovery when the Intervals begin to be long, when the emaciated Body begins to recover Fleſh, and when the Patient is not much affected or diſturbed at the Mention of Love Affairs.

The Cure of this Affection is to be directed with a View to the Correction of the hot Diſtemperature of the Viſcera, particularly the Uterus, and of the Blood and uterine Juices, and to the Evacuation of the acrid Humours, and ſeminal Matter. Theſe Intentions are anſwered by the following Method:

Firſt, then, we are to begin with Phlebotomy, and repeat the ſame ſeveral times, and as often as the Strength will permit, that the whole Maſs of Humours, and the Uterus itſelf may be refrigerated, and a Revulſion of the fervid Blood from the Veins of the Uterus procured.

If there be a Suppreſſion of the Menſes in the Caſe, the Veins are to be opened in the inferior Parts, in order to provoke that Courſe of the Humours which Nature has appointed.

If the Blood ſeems to tend towards the hæmorrhoidal Veins, which is known by their Swelling and Redneſs, theſe Veſſels are to be opened with Leeches.

After this, Cathartics are to be adminiſtered of the milder Kind, and ſuch as evacuate Bile or Melancholy, as either of them moſt abounds.

After the Uſe of Purgatives are required Julaps preparatory of the peccant Humours, or ſuch as are refrigerating and gently opening, to be uſed three Days.

Soon after this, a pretty ſtrong Purge is to be given in order to evacuate the obſtinate and deeply fixed Humours. For this Purpoſe the ſame Cathartics as are preſcribed in a Mania, are here, alſo, proper to be uſed, and to be repeated at Intervals.

After repeated Purgation, in order to the Refrigeration of the Uterus and the whole Body, and to allay the Heat of the Humours, the following Bath will be of excellent Service, being frequently uſed during the Courſe of the Diſtemper:

Take of Leaves of Lettuce, Willow, Water-lily, the Vine, Purſlane, Navelwort, each one Handful; the Flowers of Violets, Water-lily, and Roſes, each two Handfuls: Boil them all together for a Bath, which the Patient is to uſe warm, without ſweating, twice a Day, long before and after the Times of Eating.

But ſince an entire Bath cannot eaſily be continued for many Days together, a Semicupium at leaſt of the Decoction aforeſaid, or even of ſimple Water, is frequently to be uſed quite tepid, or warm; for the principal Part of the Cure conſiſts in potently refrigerating the Uterus. And this is confirmed by a remarkable Caſe related by *Harvey* in his Treatiſe *de Partu*, of a Woman of Quality, who was delirious for above ten Years from a *Furor* and *Melancholia Uterina*. After trying all manner of Remedies without Effect, ſhe happened to be ſeized with a Falling down of the Uterus, which was not ſuffered to be replaced till its hot Diſtemperature was throughly qualified by the external Cold. The Succeſs anſwered Expectation, and the Lady recovered the perfect Uſe of her Reaſon in a ſhort time, after which the Uterus was reduced to its proper Situation.

For the farther Refrigeration of the Body, it will be convenient to drink Whey for many Days together.

In ſhort, all thoſe Remedies which are preſcribed for the Cure of the Hypochondriac Affection and Mania, are of Service, alſo, in this Diſorder; Reſpect being had to its Origin, whether from Bile or Melancholy.

To all the Remedies before-mentioned, may be added ſuch as are endued with a ſpecific Property of extinguiſhing and refrigerating the uterine Juices; among which are the following Preparations:

Take of Leaves of the Water-lily, Willow, and Agnus Caſtus, each four Handfuls; Lettuce, Purſlane, Navelwort, each one Handful; the Four greater cold Seeds, thoſe of Lettuce, White Poppy, each half an Ounce; Seeds of Dill, two Drams; Flowers of Water-lily, and Violets, each one Handful: Bruiſe them freſh together, ſprinkling them with the Juice of Lemons, and diſtil them in *Balneo Mariæ*, and to each Pint of Water add a Dram of Camphire: The Doſe is an Ounce, to be taken frequently:

Or,

Of the forementioned Simples, or ſome of them, may be prepared a Decoction, which may be taken at ſeveral Doſes, ſweetened with Sugar, with an Addition of a little Camphire.

Or,

An Emulſion may be prepared of the Four greater cold Seeds, thoſe of Lettuce, and White Poppy, extracted with Waters of the Water-lily, Lettuce, and Willow, with Syrup of Violets.

Opiates may, alſo, be preſcribed of the following Forms:

Take Conſerves of the Flowers of Water-lily, Violets, and the Vitex, or Agnus Caſtus, each half an Ounce; Conſerve of Roſes, an Ounce and an half; Stalks of Lettuce preſerved, one Ounce; Coral, and Emerald prepared, each one Dram: Make them into an Opiate with Syrup of Violets, and Water-lily.

When the Delirium is at its Height, Medicines which procure Sleep are of greateſt Service, both internal and external, and ſuch as are preſcribed for the Cure of the Phrenitis and Mania.

During the whole Courſe of the Diſeaſe, cooling Clyſters, and gentle Cathartics are to be uſed, avoiding the ſtronger and more acrid Purgatives, which by Exagitation of the Matter contained in the Uterus, or its Veſſels, may cauſe an Exacerbation of the Symptoms, as is uſually the Caſe.

Injections may, alſo, be made into the Uterus of the Decoction of thoſe Herbs which have been preſcribed for Baths, and other Remedies; and with thoſe Injections Salt of Lead may properly be mixed.

Clyſters of Oxycrate frequently adminiſtered are of good Effect.

External Remedies are cooling Liniments, applied to the Loins, Pubes, and Perinæum, prepared of Oil of Water-lily, Ointment of Roſes, or the White cooling Ointment, with the Juice of Nightſhade, Henbane, and Water-lily diſſolved, with an Addition of a little Camphire.

A leaden Plate perforated is to be continually worn upon the Kidneys.

With

With regard to the proximate Cauſe of this Diſorder, ſince the Evacuation of the acrid and corrupt Juices may remove the ſame, the moſt proper Means would be, in the Beginning of the Diſeaſe, before the Fit of Deliriouſneſs becomes very manifeſt, or in ſome more lucid Interval, to diſpoſe of the Patient in Marriage to a young and luſty Man, by whoſe Embraces the Uterus being ſatiated, and the Matter contained in its Veſſels diſcharged, the Cure is effectually accompliſhed.

Peſſaries may be prepared of Leaves of *French* Mercury bruiſed, with a little Myrrh, or Powder of Birthwort. Theſe are to be introduced while the Patient is in the Bath, that the Uterus may not be over-heated, and after an Hour's Time be removed. And ſoon after Injections are to be made into the Uterus of Whey, or a Decoction of Barley, with a little Juice of Nightſhade, Houſleek, or of Hemlock, which laſt Herb is peculiarly recommended in this Affection.

For Expurgation of the Juices, the following Bolus is of great Service:

Take of *Venice* Turpentine, three Drams; Troches of Agaric, half a Dram; Seeds of Carrot, Hemp, Powder of Wood of Aloes, each eight Grains: Make them into a Bolus with Sugar.

If the Diſorder continues, Cauteries are to be applied to the Legs; for there is no Method more effectual than to derive the Matter to the inferior Parts by means of thoſe Drains.

If the Spleen be affected with a Tumor, or Obſtructions, as is often the Caſe, it is to be treated with Remedies properly adapted to thoſe Affections.

And, in the laſt place, becauſe the Brain and Heart are great Sufferers in this Diſeaſe from Vapours aſcending thither from the Uterus, proper Relief is to be provided for each Part; the Brain is to be eaſed as much as poſſible by Frictions, and Ligature on the inferior Parts, and Application of Cupping-glaſſes to the Hips and Groins; and the Heart muſt be relieved by Epithems, both liquid and ſolid, ſuch as are preſcribed in Decays of the vital Forces. *Riverii Prax. Med.*

UTERUS. The Womb.

In inveſtigating the curious Structure of the Uterus, we ſhall firſt take notice of the ſurpriſing Force, or elaſtic Power, of its muſcular Fibres and Veſſels, which are capable of being incredibly diſtended, and of ſpontaneouſly returning to their former State. This is principally obvious in pregnant Women, whoſe Uterus is ſometimes incredibly diſtended by a large Fœtus, or Twins, and the Secundines and Waters; but when theſe are excluded, the Uterus is again leſſen'd, and contracted, ſo as hardly to be an hundredth Part ſo big, as during Geſtation: And though other Parts of the Body, ſuch as the Skin and Scrotum, when diſtended by a dropſical Tumor, or the Stomach and Inteſtines when turgid with Flatulences, are capable of yielding in a ſurpriſing manner, when acted upon by an interior Force, and of contracting themſelves into their natural State and Space, when that Force ceaſes; yet this Power of Dilatation and Contraction is no-where ſo conſpicuous as in the Uterus. Beſides, what is ſtill more ſurpriſing is, that though the Uterus, which, out of a State of Geſtation, is hardly equal to a Pear in Figure and Bulk, grows to ſo vaſt a Largeneſs, yet its Thickneſs is not leſſen'd by this Expanſion, but rather remains the ſame.

Beſides, no Part of the human Body is furniſh'd with ſuch numerous Veſſels as the Uterus. The firſt of theſe Veſſels are, the ſpermatic Veins and Arteries, which are contiguous to the *Ovaria*; and, being in numerous Ramifications convey'd to the Bottom of the Uterus, terminate there, which is ſufficiently obvious, from this, that, by blowing into theſe ſpermatic Veſſels, the Bottom of the Uterus is diſtended. After the ſpermatic Veins and Arteries, the next moſt conſpicuous Veſſels are, the Ramifications of the hypogaſtric Artery and Vein, which run to the middle and inferior Part of the Uterus, as, alſo, to the Vagina; to which, alſo, eſpecially where it is connected with the Rectum, are diſtributed the Ramifications of the external hæmorrhoidal Veins, which are by an Anaſtomoſis join'd with the Ramifications of the internal hæmorrhoidal Veins; and, which is particularly to be obſerv'd, theſe Blood-veſſels, copiouſly diſtributed through the Body of the Uterus, not only run everywhere, in a winding incurvated Direction, but are, alſo, very ſmall in Virgins, barren Women, and ſuch as are not with Child; notwithſtanding which, after Conception, in pregnant Women, theſe Veſſels are ſo enlarg'd, both with reſpect to Length and Breadth, that their ſmalleſt Ramifications become capable of admitting a large Probe.

Beſides the large Congeries and winding Direction of the Veſſels in the Uterus, there is ſo remarkable and ſingular a Concurrence of theſe Ducts, that there is no-where ſo frequent and great an *Anaſtomoſis* or Conjunction both of arterial and venous Veſſels diſtributed from different Parts of the Body: For when the ſpermatic Veſſels are blown up, the hypogaſtric are, alſo, dilated; and when theſe are expanded, the former are ſo too. The external Hæmorrhoidals, when blown up, diſtend the internal, which, when expanded, dilate the former: Beſides, there is a manifeſt Connection obſerv'd between the ſpermatic Veſſels of the Right and Left Side. But there is this peculiar in the exquiſite Connection of the Veſſels of the Uterus, that their Extremities terminate in ſuch a manner, as to form mutually communicating oval *Cellulæ* of different Bulks, which render the Subſtance of the Uterus ſpongeous and fungous, and which, in pregnant Women, are ſurpriſingly enlarg'd. Hence it is that the Uterus, eſpecially of a pregnant Woman, when cut tranſverſly, exhibits large and almoſt numberleſs Cavities: By means of this ſinuous and cavernous Conjunction of the Veſſels it is, that not only the Uterus in pregnant Women is greatly diſtended by the contain'd Blood, and its Compages, which was before tenſe and conſtricted, render'd more lax and ſoft, but, alſo, that the Orifices of the Extremities of the Veſſels, which under the Membrane of the Uterus open obliquely into its Cavity, and through any of which, when Air is blown, it eaſily paſſes into the Cavity of the Uterus, are more dilated; by which means, the perforated Filaments of the vaſcular Membrane of the Chorion can receive Nouriſhment from them, and convey it to the Fœtus.

Nor in this anatomical Conſideration of the Structure of the Uterus, and eſpecially of its Veſſels, are we to forget, that not only the hypogaſtric Veins, which return the Blood, have Diameters as large again as the hypogaſtric Arteries, but, alſo, that the ſpermatic Veins do not run ſtrait, but in a winding manner; ſo that if they were ſtretch'd out, their Length would amount to ſome Ells, and be three times greater than that of the ſpermatic Arteries. All theſe Circumſtances ſufficiently evince, that the Motion of the Blood through theſe Veins is ſlow, eſpecially ſince they are deſtitute of Valves, by means of which, in other Parts of the Body, the otherwiſe ſlow Return of the Blood to the Heart is greatly promoted and aſſiſted. With reſpect to the Structure of the Uterus, it is, alſo, remarkable, that it is deſtitute of Fat, with which other internal Parts are copiouſly cover'd, for this Reaſon, no doubt, leſt its Membrane, being furniſh'd with adipoſe Veſſels, ſhould hinder the free Expanſion and Contraction of its Sides.

From what has been ſaid, many difficult Phenomena, with reſpect to the natural and preternatural State of Women, may be more clearly explain'd; many Errors in the pathologic and therapeutic Parts of Medicine detected; and a ſurer and more compendious Method of treating Diſeaſes, ariſing from Indiſpoſitions of the Uterus, eſtabliſh'd.

To begin, then, with the moſt uſual Diſorder of this kind: It is ſufficiently known, that, every Month, Women, from the time of Puberty till they are pretty far advanced in Years, have a ſalutary Excretion of pure Blood from the Mouths of the Veſſels, whether diſperſed through the Uterus, or the Vagina; but when this Excretion is either totally ſuppreſs'd, too ſcanty, or returns at irregular Periods, violent and terrible Diſorders are produced; ſo that Phyſicians, in all Diſorders incident to Women, ought to have a juſt and careful Regard to the State of the menſtrual Diſcharge. But in ſpecifying the Cauſes of this Evacuation, Phyſicians run into different Opinions, ſince ſome aſſert that it is owing to a certain ſpecific Ferment; others, that it is produced by a certain determinate Effort of an intelligent Principle, endeavouring to expel what is diſagreeable to Nature: Others aſſert, that this Evacuation is produced by the Influence of the Stars, and eſpecially of the Moon; whilſt ſome maintain, that it is the Effect of a Redundance of Blood, which is denied by others; becauſe, ſay they, by Veneſection, which hinders the Generation of a Plethora, this menſtrual Diſcharge cannot be totally remov'd, or check'd.

But the Perſon who carefully conſiders the mechanical Structure of the Uterus, with reſpect to its Veſſels and Fibres, will eaſily perceive, that the true Cauſes, and even the Effects, of this periodical Evacuation, are expreſſive of the greateſt Wiſdom and Contrivance in Providence: For as the Uterus, on account of the numerous Veſſels with which it is furniſh'd, and their winding Direction, as, alſo, on account of the eaſy and ſurpriſing Dilatation, of which it is capable, affords a fit Receptacle for the redundant Blood; hence, if this vital Liquor in Women, who are always greatly diſpoſed to the Generation of a Plethora, is, in proceſs of time, gradually accumulated in the uterine Veſſels, and not return'd in a due Degree and Proportion thro' the Veins, the vaſcular Sinuſes are fill'd and infarcted with it, till their Extremities, which terminate obliquely in the Uterus, being too much diſtended, at laſt open, and diſcharge a pure Blood into the Cavity of the Uterus, or the Vagina. But when

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a ſufficient Quantity of the redundant Blood is evacuated, the Mouths of the Veſſels again collapſe, and are contracted; and the Plethora being diminiſh'd, the Circulation of the reſt of the Blood is render'd freer, not only through the Uterus, but all the other Parts of the Body. Thus, on account of the exquiſite Relation every thing in the animal Oeconomy bears to the Circulation of the Blood, this ſalutary Evacuation is produced.

Since, then, a Redundance of Blood is the principal Cauſe of the menſtrual Diſcharge, it is ſufficiently obvious, that thoſe Phyſicians commit a terrible Error, who, in Caſes where the Menſes are ſtop'd by previous Diſorders, or exceſſive Hæmorrhages from other Parts, endeavour to recal that Diſcharge by ſtrong, forcing, and emmenagogue Medicines; whereas their Intention ought rather to be, after the Diſorder is ſurmounted, to reſtore the Appetite and Digeſtion, and, by ſalutary Aliments, which are eaſily digeſted, and generate a laudable Chyle, to rouze and augment the depreſſed Sanguification; and, when this End is obtain'd, the Menſes again flow ſpontaneouſly.

But ſince the Structure of the Uterus, with reſpect to its Texture, contractile and expanſive Power, Largeneſs and Smalneſs, is not the ſame in all, but differs, with reſpect to Age, hereditary and native Conſtruction of the ſolid Parts, and Method of Life, it is abſolutely incumbent on a Phyſician, who endeavours either to judge of, or cure Diſorders ariſing from the Uterus, carefully to inveſtigate the Nature and Diſpoſition of that Part, and afterwards to treat the Diſorder by proper Remedies. Nothing is more frequent in Practice, than, when in Virgins, and tender Women, the Menſes do not return at their proper Periods, to adviſe Veneſection; and, after that, to preſcribe forcing Medicines, and even ſuch as excite a violent Turgeſcence and Commotion in the Blood; by which means the miſerable Patients are thrown into a worſe State than before; ſince a Chloroſis is brought on, and accompanied ſometimes with Convulſions, ſometimes with Diſtentions of the Limbs, or with ſlow Fevers, violent Head-achs, and other Diſorders, of a like Nature: This, in my Opinion, happens, for no other Reaſon, than that the Suppreſſion or ſcanty Diſcharge of the Menſes derives its Origin from the tenſe Stricture of the Fibres of the Uterus, and the exceſſive Smalneſs of the Veſſels, ſo that they are difficultly diſtended by the Blood: For it is certain, from Experience, that young and tender Girls, by the Abuſe of Acids, or by the too free Admiſſion of Cold to their inferior Parts, whilſt they ſit almoſt naked on the cold Ground, have contracted an anomalous State of the Menſes, accompanied with terrible Symptoms, and hardly capable of being cur'd.

If an irregular State of the Menſes proceeds from this Cauſe, forcing Medicines are not only uſeleſs, but, alſo, prejudicial; for when the Veſſels are contracted, and cloſed up, and the Blood thrown into a quick Motion and Ebullition, a greater Infarction and Obſtruction, and a Regurgitation of the Blood to the more noble nervous Parts, will happen, and, by that means, produce Spaſms and Convulſions. Nor is Veneſection in the Foot, in other Caſes highly beneficial for the Alleviation of the Symptoms, of any great Service; but frequently, on account of the greater Derivation it occaſions to the Uterus, confirms the Obſtruction, and hinders the Blood from being diſcharg'd from the Orifices of the uterine Veſſels. Almoſt the only Relief, in this Caſe, is found in tepid emollient Fomentations, and Baths, which relax the conſtricted Fibres. This Intention is excellently anſwer'd by Baths of pure light Rain-water alone, or by thoſe of the ſulphurated *Toeplitz* Waters, ſeaſonably uſed; but, internally, rejecting all hot, acrid, and balſamic Subſtances, let the Patient drink mineral Waters; and, if ſhe has not an Opportunity of doing ſo, the next moſt efficacious Medicines are, neutral Salts, of an inciding, aperient, gently diuretic, and laxative Quality, exhibited in a ſufficient Quantity of ſome proper Liquor. The moſt conſiderable Salts of this Kind are, Borax, *Sedlitz* Salts, the *Terra ſoliata Tartari*, a Solution of Crabs-eyes, the *Arcanum Duplicatum*; and, in Perſons of bilious Habits, Nitre is of uncommon Efficacy. But, if the *Primæ Viæ* are full of acid Sordes, the Liquor of the Salt of Tartar, with a ſmall Quantity of the Maſs of balſamic Pills diſſolv'd in it, affords the moſt ſurpriſing Relief.

But as the Suppreſſion or ſcanty Evacuation of the Menſes ariſe principally from a Narrowneſs, Compreſſion, and Stricture of the Arteries of the Uterus, ſo exceſſive Diſcharges of this Kind derive their Origin from the too great Largeneſs, Relaxation, and weaken'd Tone of the uterine Veſſels, and the Sinuſes form'd by them in the Subſtance of the Uterus, and from the ſlow Return of the Blood through the Veins to the Heart, occaſion'd by that means: For, if we except the Liver, there is no Part of the Body in which the Motion and Return of the Blood to the Heart is obſerv'd to be ſo difficult, as in the Uterus; which happens not only on account of the perpendicular Situation of this Part, with reſpect to the Heart; but, alſo, becauſe the Veſſels, and eſpecially the Veins, as we have already obſerv'd, run in a very winding and incurvated manner, through the Texture of the Uterus. Beſides, ſince, both on account of the Diſtenſion of the Uterus by the Fœtus, and the winding Direction of the hypogaſtric and ſpermatic Veins, the quick Motion of the returning Blood is greatly retarded, the Reaſon is obvious, why the Diameters of the uterine Veins ſhould be as large again as thoſe of their correſponding Arteries: So that we may reaſonably conclude, that four times as much Blood is contain'd in the uterine Veins, as in their Arteries. If, therefore, the venous Sinuſes, with which the Compages of the Uterus abounds, are preternaturally diſtended by a thick ſtagnant Blood, by this means the Blood, being ſtrongly convey'd through the Arteries, and denied a Paſſage through the Veins, it by its Quantity and Force at laſt opens the diſtended Orifices of the Veſſels, ſo that their Contents are copiouſly diſcharg'd.

From what has been ſaid we may eaſily underſtand why Virgins have more rarely exceſſive menſtrual Diſcharges, than Women who have brought forth Children, or ſometimes pregnant Women, in whom an exceſſive Hæmorrhage from the Uterus frequently proves the true Cauſe of Abortion: For it is ſufficiently known, that an abortive Excluſion of the Fœtus rarely happens without an exceſſive previous Hæmorrhage from the Uterus: For when, in pregnant Women, the venous Veſſels of the Uterus are preternaturally diſtended, by the copious Afflux of Blood, and when the Blood becomes grumous, and coagulated in the ſmall Cells of the Uterus, not only the Orifices of the Arteries, but, alſo, the infarcted Sinuſes, being open'd, and a convulſive Motion of the Uterus and adjacent Parts, without which an Abortion is not eaſily produc'd, happening, the Arteries and Sinuſes diſcharge a large Quantity of Blood with Impetuoſity, the Uterus becomes flaccid, the Placenta is ſeparated from the Filaments of the Uterus, and from the Apertures of the Veſſels, and, laſtly, the Fœtus, is excluded, two or three Days after the Hæmorrhage.

Hence pregnant Women, if in the laſt Months of Geſtation Nature attempts an Abortion with an exceſſive Hæmorrhage from the Uterus, are often in great Danger; nor is the Danger leſs, when the Excluſion of a mature Fœtus is preceded by a large Diſcharge of Blood. It is certain from Experience, that by this Misfortune, both the Mother and Infant are expoſed to the moſt imminent Danger, and unleſs the latter is brought into the World, both are deſtroy'd by the Hæmorrhage which cannot be ſtopt; for ſo long as the Infant, whether mature, or only an Embryo is retained in the Uterus, the Uterus, with its Veſſels, is not only greatly diſtended, but the Orifices of the Veſſels, on account of the more impetuous Afflux of Blood to them, being more opened, diſcharge a greater Quantity of Blood, which flows continually; whereas when the Fœtus is excluded, though the Mouths of the Veſſels opened by the Removal of the Secundines, with which they were before covered, diſcharge a large Quantity of Blood, yet when the Diſtenſion of the Matrix ceaſes, the open Orifices of theſe Veſſels collapſe, and, upon their Contraction, the Hæmorrhage ceaſes. In ſuch a Caſe, if we intend to preſerve the Mother, and prevent a mortal Hæmorrhage, nothing remains but to extract the dead Fœtus with all Expedition, or in the ſafeſt manner poſſible, to procure a ſeaſonable Abortion. This Doctrine is ſufficiently confirmed by *Bhonius*, in *Diſſert. de Abortu ſalubri.*

Though violent Affections of the Mind, eſpecially Frights, or intenſe Commotions, and Rarefactions of the Blood, ariſing from violent Exerciſe, too hot Baths, or the Uſe of draſtic Purgatives, Emetics, Sudorifics, or Emmenagogues, are the frequent Cauſes of Abortion, yet unleſs the Veſſels of the Uterus are preternaturally diſtended, relaxed, and infarcted by a Redundance of Blood, and the Matrix ſubject to ſpaſmodic and convulſive Motions, an Abortion is not greatly to be dreaded. Hence we may juſtly reckon it an Error, not only in the Vulgar, but, alſo, in ſeveral Phyſicians, who are of Opinion, that ſome Remedies infallibly procure Abortion; whereas it is certain from Experience, that Women of Pleaſure, when pregnant, cannot ſometimes obtain their wicked Ends by copious Veneſections, and the Uſe of draſtic Purrgatives, Emetics, and Emmenagogues, though when the Matrix is diſpoſed to a too ſpeedy Excluſion of the Fœtus, Abortion is procured by the ſlighteſt Cauſe. It is, therefore, a ſingular Proof of the Goodneſs and Wiſdom of Providence, that there are not found in Nature Remedies univerſally and infallibly capable of procuring Abortion, ſince by their means numberleſs Murders might be committed.

Nothing happens more frequently than that Women who have once ſuffer'd Abortion, are again eaſily ſubject to the like Misfortune, at the ſame Period of their Geſtation. It is, alſo, certain

certain from Experience, that generally ſanguineous Maſſes, as large as an Hen's Egg, together with a large Quantity of grumous Blood, are excluded from the Uterus before Abortion happens, which is a manifeſt Proof, that the Strength and Elaſticity of the Uterus and its Veſſels, are ſo weakened by the precening Abortion, that they could not ſoon return to their natural State; for the ſo frequent Diſpoſition of the Uterus to Abortion is only to be accounted for from the exceſſive Relaxation and Dilatation of the Veſſels. And this Dilatation muſt be removed, and the Tone of the Veſſels reſtored by a prudent Phyſician, in the firſt Days or Weeks after Abortion, or natural Birth, by mild Laxatives, and temperate balſamic Corroboratives, duly repeated, or by a proper Diet; or if the Patient is plethoric, and has conceived, by proper Veneſection in the firſt Months of Geſtation; and unleſs theſe Meaſures are taken, this peccant State of the Uterus is not removed without great Difficulty; for, what is carefully to be adverted to, too great a Redundance of Blood with reſpect to the Veſſels and Strength, to which Women of ſpongious Habits, thoſe who are coſtive, and ſuch as lead a ſedentary Life, are principally ſubject, proves the material Cauſe of Abortion. Hence, if in the firſt Months of Impregnation the Blood is not by the provident Force of Nature diſcharg'd from the external Region of the Uterus, at the uſual Period, which frequently happens; or if too ſmall a Quantity of Aliments are taken into the Stomach, on account of Inappetence, Nauſea, Subverſion of the Stomach, and Uneaſineſs of the Præcordia, which in the firſt Months after Impregnation are very common Symptoms; or if in Proportion to the redundant Blood Veneſection is not duly performed, and the Patient's Body kept ſoluble by proper Remedies, the Fœtus rarely arrives at Maturity, and ſeldom is retained in the Uterus till the full Time.

There is, alſo, another no leſs fatal Error in Practice, which is an Attempt by frequent Veneſections in the Arm, the liberal Uſe of refrigerating, or actually aſtringent Medicines, ſuch as Opiates, and Narcotics, to put an imprudent Stop to menſtrual or lochial Diſcharges, either in Childbed Women, or ſuch as have ſuffered Abortion; for by this prepoſterous Method, and the Uſe of improper Remedies, the natural Strength, Tone, and Elaſticity, not only of the Uterus, but, alſo, of all the Solids, are greatly diminiſhed, and the Misfortune rendered either incurable, or far worſe than it would have otherwiſe been; for what to ſome may perhaps appear a Paradox, we rather affirm, that the ſame Method, and almoſt the ſame Remedies, by which a Diminution and Suppreſſion of the Menſes are removed, are moſt beneficial for checking them when immoderate, and reducing them to a natural State: For it is certain from Experience, that both an exceſſive and too ſcanty menſtrual Diſcharges, have been cured by a proper Uſe of hot and cold medicinal Waters, Baths of nervous and emollient Herbs, uterine Clyſters, Preparations of Steel, the balſamic Pills, thoſe of *Becher*, and others made in the ſame manner, Baths for the Feet, and the Uſe of deterſive nitrous Salts; for in both States the Tone of the Uterus is deſtroy'd, the Veſſels diſtended with Blood, the Circulation of the Humours through the uterine Ducts not free and eaſy, but intercepted by Infarctions, Obſtructions, and Stagnations; for removing or correcting which, the forementioned Remedies are very proper.

We now come to conſider another Diſorder of the Uterus, which is to be derived from the ſame Structure of the Matrix we have already mentioned; for in the Compages of the Uterus, the Direction of the numberleſs Veſſels is winding and intricate, and the Circulation of the Blood through them, highly ſlow and difficult; ſo that it is not to be wondered at, if, in conſequence of a depraved Nutrition, both the internal Surface, internal Cavity, Neck, or even Vagina of the Uterus, ſhould be preternaturally ſubject to fleſhy and fungous Excreſcences of various Figures, Bulks, and Structures, which ſometimes ſo augment it, as to reſemble a State of Pregnancy. Fibrous bloody Maſſes, and polypoſe Concretions formed of Membranes, are, alſo, more frequently generated in the uterine Veſſels than any where elſe, and lay a Foundation either for Sterility, or immoderate Hæmorrhages from the Uterus, which are ſucceeded by Abortion. Concretions of this Kind are commonly called *Moles*, of which there are various Species; by *Lamſweerd* diſtributed into Moles of Nutrition, and thoſe of Generation; but leſt theſe ſhould be confounded, as they eaſily are, we ſhall conſider their Difference ſomewhat accurately.

Firſt, then, the Secundines, with a tender Fœtus of one or two Months old, excluded by Abortion, is by ignorant Perſons taken for a Mole, becauſe it reſembles a fleſhy Concretion. Beſides, though more rarely, globulous Maſſes formed in the Uterus itſelf, often create a Suſpicion of Pregnancy, and are frequently found in ſuch Perſons when dead, or are excluded by a preternatural Increaſe of the Motion and Conſtriction of the Uterus; beſides, it ſometimes happens, that, a few Months after Abortion, or a legitimate Delivery, Women who have

been judg'd pregnant, have diſcharg'd from the Uterus ſolid fleſhy Maſſes, of various Bulks and Figures, which, as they are deform'd, and reſemble a Mole, large Mouſe, or ſome other Animal, are not only, by the Vulgar, aſcrib'd to Incantation, and ſaid to be Moles, but, alſo, by ſome Phyſicians, given out for preternatural Conceptions, ariſing from the Imbecillity of the ſeminal Fluid. Theſe Concretions are often carried in the Uterus for a Year, and longer; and, by reaſon of the various Symptoms peculiar to the Mother, create a Suſpicion of a true Embryo; but are generally excluded on the tenth or eleventh Month. But Mr. *Ruyſch*, in *Obſervat. Anatomico-chirurg.* 28. & 58. ſeems to have advanc'd a more ſolid and rational Doctrine, when he aſſerts, that all theſe Concretions ariſe from Pieces of the Secundines left after the Excluſion of the Fœtus, and firmly connected with the Veſſels of the Uterus; and that theſe Pieces, being nouriſh'd by the Afflux of the Blood, increaſe; and, in Proceſs of time, becoming more compact, and hard, aſſume various Figures, according to the different Compreſſion of the Uterus: For it often happens, that the Secundines are diſcharg'd dilacerated; for which Reaſon, it is expedient, after the Delivery, to inſpect whether they are entire, or ſeparated: For if any Portion remains, the Patient is often ſubjected to violent Symptoms; for which Reaſon, the remaining Piece is to be expeditiouſly expel'd; which I have known ſucceſsfully done by a proper Clyſter, or by the *Pilulæ Balſamicæ*. But Maſſes of Blood, and membranous Fibres, by ſome call'd Polypuſes, are more frequently obſerv'd, and theſe, being form'd in the dilated Veſſels of the pregnant Uterus, and at laſt propel'd by the ſtrong Effort of the Matrix and adjacent Parts, frequently cauſe Abortion, which they either precede, accompany, or follow.

Having thus traced the Difference, and inquir'd into the Origin of Moles, we may the more eaſily determine that important Queſtion, Whether Virgins can be pregnant with Moles. For it is ſufficiently obvious, that the Species of Moles, ariſing from enlarg'd Pieces of the Secundines, can by no means be found in Virgins. Nor are the Pieces of fibrous and coagulated Blood, which are thought Moles, or Polypuſes, found in the Uterus of Virgins, the Veſſels of which are very ſmall, and narrow; but they are principally obſerv'd in pregnant and Child-bed Women. But it is neither unuſual, nor impoſſible, that fungous Bodies ſhould be produc'd, both on the external Surface, and in the internal Cavity, of the Uterus of a Virgin, who has been ſubjected to ſome external Violence, ſuch as a Fall from an Height on the Abdomen, as we are inform'd by *Bartholine*, *Cent.* 1. *Hiſt.* 97. and by *Horſtius*, in *Lib.* 4. *de Morb. Mulier. Obſ.* 39. Nor is it to be deny'd, ſince it is certain from Experience, that married Women, Widows, Women advanc'd in Years, thoſe above Fifty, and thoſe of ſanguine and corpulent Habits, have, after a long Ceſſation of the Menſes, evacuated fleſhy and bloody Moles, ſometimes as large as an ordinary Fiſt, and of different Degrees of Softneſs and Hardneſs, accompanied with immoderate Effuſions of Blood. Of this we have Inſtances in *Marcellus Donatus*, *Lib.* 4. *Cap.* 25. *Joh. Rhodius*, *Cent.* 3. *Cap.* 53. and *Rodericus a Caſtro*, who gives us an Inſtance of this Kind in a Woman of ſeventy Years of Age.

On account of the difficult and ſlow Return of the Blood through the Veſſels of the Uterus, eſpecially the ſpermatic Veſſels, which run into various Windings and Curls, like the Tendrils of Vines, and, conſequently, make the Way to the Heart longer than it would otherwiſe be, it, alſo, happens, that, in the Uterus, and adhering Parts, eſpecially the Tubes and Ovaries, there ſometimes happen Inundations of Serum, and aqueous Tumours; for never does the fluid and aqueous Part of the Blood ſooner recede from the reſt, than when it paſſes through the Viſcera in a ſlow and languid manner; as is ſufficiently obvious in the Liver; for which Reaſon, in no Part are there more numerous lymphatic Veſſels obſervable, than in the Subſtance of the Uterus and Liver, and adjacent Parts; and theſe lymphatic Veſſels, being, by the Afflux of the Lymph, diſtended, are rais'd into large Bliſters, or Hydatides, which being broken, a Dropſy is ſometimes quickly generated, and a ſurpriſing Quantity of extravaſated Serum lodg'd in the Cavity of the Abdomen. Thus *Salmuthus*, in *Cent.* 1. *Obſ.* 38. informs us, that, after a difficult Labour, he found many Hydatides in the Confines of the Uterus. *Pechlinus*, in *Obſ.* 19. tells us, that he found the ſame in an hyſteric Patient, who dy'd pregnant. And *Tulpius*, in *Lib.* 4. *Obſ.* 45. gives us an Inſtance of a Woman, in whom the Horns of the Uterus contain'd about nine Pints, or more, of Water and Pus, included in numberleſs Veſicles. More Inſtances of this Kind occur in *Schenckius*, *Lib.* 3. *Obſ.* 6, 7. *Rolfinckius de Organ. Genital. Cap.* 20. and *Sydenham*, *de Hydrope*. *Harderus*, alſo, informs us, that, in a Countrywoman, the Left Ovary contain'd three Pints of a ſaltiſh and fetid Water, and that the *Fallopian* Tube annex'd to it had a remarkable Hydatid on it. About twenty Years ago, I remember to have ſeen produc'd, in a Woman of forty

Years of Age, by a violent Fall on the hypogaſtric Region, a Swelling in that Part, accompanied with a tenſive Pain; and this Swelling was ſucceeded by a large Diſcharge of limpid Water, which was firſt evacuated with the Menſes; and when the Diſcharge of the Blood ceas'd, that of the Lymph continu'd for half a Year, ſo that the Patient daily diſcharg'd almoſt a Pint; till, having try'd all Remedies in vain, ſhe at laſt dy'd of a Conſumption, and ſlow Fever.

I have, alſo, frequently obſerv'd, that a Dropſy is conceal'd under a State of Pregnancy, which frequently lays a Foundation for Phyſicians paſſing a fallacious Judgment; but I have ſeen pregnant Women, labouring under a Dropſy at the ſame time, preſerv'd by a copious Diſcharge of the Serum; but when the Humour is diſcharg'd into the Cavity of the Abdomen, it proves mortal. *Platerus*, in *Lib. 3. Obſervat.* gives us a memorable Inſtance of a Woman who was afflicted with an *Aſcites* every time ſhe was pregnant. I myſelf have ſucceſsfully reſtor'd Women, who, from a Cachexy, ariſing from irregular Living, and a Defect of the Menſes, have fallen into a Swelling of the whole Body, accompanied with a Difficulty of Breathing, Drowſineſs, and Defect of Strength: From theſe Women, after the Uſe of the balſamic Pills prepar'd in my manner, and of the aperitive Salt, a large Quantity of Water was evacuated, not only by Stool, but, alſo, from the Uterus, both at the time of their Menſes, and out of it; and when this Water was evacuated, all the violent Symptoms were gradually abated: Hence I am of Opinion, that dropſical Tumours in Women ariſe rather from a Fault of the Uterus, than of the Liver; and that when they ariſe from the former alone, they are more eaſily cur'd than when the latter is affected; becauſe there is a freer Diſcharge to the ſtagnant Serum through the Uterus.

Hence it is eaſy to perceive the Reaſon why not only Virgins, but, alſo, married Women, are ſo frequently afflicted with a long-continu'd and uneaſy Diſcharge of Serum of various Colours and Conſiſtences, from the Uterus: For becauſe the Tone and Motion of the Matrix, which conſiſt in the equable Contraction and Relaxation of its Fibres, are eaſily injur'd, and weaken'd, and the Motion of the Humours through the winding uterine Veſſels ſlow and languid, and the Return of the Blood through Veins deſtitute of Valves, alſo, very ſlow; not only Infarctions, and Stagnations of the Blood and Serum, eaſily ariſe in the Matrix, but, alſo, the ſerous and lymphatic Juice, becoming viſcid by its ſlow Circulation, prepares a Way for itſelf, and is diſcharg'd through the Orifices which every-where occur in the Uterus and Vagina. It is the common Opinion of moſt Authors, that this Humour is ſecreted from the *Lacunæ* of *De Graaf*, or the ſmall Pits remarkable about the *Urethra*, and the ſmall Glands lodg'd there: But in theſe *Lacunæ* there is no Perforation found capable of admitting even a Briſtle; but rather, on both Sides of the Orifice, and through the whole Subſtance of the Vagina, there appear more numerous *Lacunæ*, which eaſily receive half a Finger's Length of a Briſtle, and whoſe Ducts, when compreſſed, diſcharge a Liquor not unlike the ſeminal Fluid. See *Heiſter. Compend. Anatom.*

But though theſe Glands, when greatly relax'd, may diſcharge a copious Humour, yet they are not the only and genuine Seat of a *Fluor Albus*; but there are far more numerous Paſſages, from which the Matter of the *Fluor Albus*, and the impure ſerous Liquor diſcharg'd with and after the lochial Flux in Child-bed Women, derive their Origin. And though Mr. *Ruyſch* denies, that Glands have ever been ſeen, or their Exiſtence demonſtrated, in the Uterus; yet it is not to be doubted but the Serum may attempt its Diſcharge from the ſmall Mouths of the Veſſels, which evacuate the Blood during the Menſes: For the celebrated *Fantoni*, in *Anat.* makes a memorable Obſervation, which is, that Air may be blown through the Veins of the Uterus into the Cavity of the Matrix and Vagina, and from the latter through the former. Beſides, according to *de Graaf*, and *Hornius*, Pores and ſmall Perforations are obſerv'd in the Neck of the Uterus. *Verheyen*, in *Anatom. C. H. Cap.* 33. *e, f, Tab.* 17. *Fig.* 2, 3. informs us, that in a Uterus macerated in Water, and retain'd in a moderate Heat for ſome time, he ſaw many globular Corpuſcles, not only in the interior Surface of the Vagina, in ſome Parts form'd into Cluſters, and elſewhere diſſeminated through it, but, alſo, in the inferior Part of the Cavity of the Uterus; and theſe Corpuſcles, he thinks, ought to be juſtly look'd upon as ſmall Glands, ſubſervient to the Secretion of a ſerous and pituitous Humour.

This Diſorder, which at firſt Sight appears ſo ſlight, as to be only eſteem'd a ſerous Defluxion, is, nevertheleſs, highly obſtinate, and not to be cur'd without the greateſt Difficulty; which, in my Opinion, is owing to this, that moſt Phyſicians only ſeek for the Cauſe of it in a deprav'd Sanguification, a want of a due ſpirituous Quality in the Blood, and a Redundance of Serum; whilſt, little ſolicitous to reſtore the Tone of the Uterus, and promote the briſk Circulation of the Blood through it, they attack the Diſorder with Anticacheƈtics, Purgatives, and ſuch Medicines as eliminate the Serum, omitting Corroboratives, which are highly neceſſary. I, in order to remove this obſtinate Diſorder, recommend the Uſe of balſamic Pills, prepar'd after the manner of *Becher*, of bitter Extracts, balſamic temperate Gums, and a ſmall Quantity of Extract of Aloes and black Hellebore, eſpecially if uſed with ſome chalybeate Medicine: For ordinary Drink, the Patients ought to uſe a Decoƈtion prepar'd of the Wood of the Maſtich-tree, the Roots of Sarſaparilla, Shavings of red and yellow Sanders, Currants, Hartſhorn, and Fennel-ſeeds; externally, Morning and Evening, balſamic Fumigations of Maſtich, Amber, Olibanum, Tacamahaca, and artificial Cinnabar, are to be uſed; or, by means of a Syringe, the *Aqua Sclopetaria* is to be injected into the Womb, or a Liquor prepar'd of the Root of Birthwort, the Herbs Mugwort, Feverfew, Agrimony, Silverweed, Myrrh, Maſtich, Myrtle-leaves, and the Flowers of red Roſes boil'd in Red-wine; which proves highly beneficial, not only when injected into the Uterus, but, alſo, when frequently apply'd with linen Cloths to the Region of the Pubes. But to all theſe we prefer natural Baths, which, on account of their chalybeate Principle, are of a corroborating Quality; ſuch as the Waters of *Lauchſtad*, eſpecially when boil'd with nervous Herbs, which corroborate the Uterus; ſuch as Baum, Mint, Origanum, Mother of Thyme, Clary, *Roman* Chamomile, and Marjoram; for theſe, frequently exhibited, after the Uſe of Balſamics, and, when the Body is duly purg'd, are of ſingular Efficacy, not only in this, but in other Diſorders ariſing from a Fault of the Uterus, eſpecially if at the ſame time temperate mineral Waters are drank.

But as the Diſorders of the Uterus, hitherto ſpecify'd, ariſe principally from its Relaxation, and want of Tone; ſo there are others which derive their Origin from its exceſſive and ſpaſmodic Stricture: For the Matrix has this in common with all other Parts compos'd of muſcular and nervous Fibres, that it is, on certain Occaſions, ſeiz'd with Spaſms, and ſometimes even agitated with convulſive Motions: But as in the internal Orifice of the Womb, which is of an exquiſite Senſation, the Remiſſion of the Motions, ſo, alſo, the intenſe and preternatural Rigour, is principally perceiv'd in the ſame Part, becauſe it is in a great meaſure compos'd of nervous Fibres connected with each other, and running in a ſpiral Direction: For ſometimes an exceſſive Conſtriction of the internal Orifice of the Uterus not only renders Birth difficult, but, alſo, unleſs relax'd by emollient Baths, Ointments, and Fomentations, abſolutely prevents the Excluſion of the Fœtus. It is, alſo, certain, from Experience, that a raſh Admiſſion of Cold to the inferior Parts, eſpecially the Confines of the Uterus, during the lochial or menſtrual Diſcharges, puts a Stop to theſe Evacuations. The ſame Effect is, alſo, produc'd by Frights, which, as they are of great Efficacy in conſtricting, eſpecially the Fibres and Ducts of the external Parts, ſo this Influence is in a particular manner obſerv'd in the nervous and muſcular Subſtance of the Uterus, and its Parts; and frequently proves the Cauſe of Abortion, or of an exceſſive or ſuppreſs'd lochial or hæmorrhoidal Diſcharge. Emetics, acrid Purgatives, and all Kinds of Poiſon, induce a great Change on the Uterus, and, by exciting Spaſms in it, eaſily procure Abortion, in Women of delicate Habits.

It is, alſo, certain, that, in order to exclude not only the Fœtus and Secundines, but, alſo, Moles, and Maſſes of coagulated Blood, it is neceſſary there ſhould be an intenſe ſyſtaltic or conſtrictory Motion of the Uterus, ſo that its Bottom being conſtricted and corrugated, its Orifice and Vagina may be dilated. When, therefore, in Women in Labour from a Defect of Strength, this intenſe Motion and conſtrictory Force of the Uterus fails, Analeptics are to be us'd; ſuch as Cinnamon, and the Oil and ſpirituous Water of Cinnamon; as, alſo, other Corroboratives, ſuch as the Eſſences of Amber and Myrrh, the Balſam of Life, the *Spiritus Oleoſus* of *Sylvius*, and the Bezoardic Spirit of *Buſſius*; Emmenagogues, alſo, are of great Uſe, as Borax; and Vomits are, by ſome Phyſicians, greatly recommended, in order to ſtimulate the Fibres of the Uterus to a briſker Motion.

On the contrary, when before or during the Labour, the Uterus is ſeiz'd with ſpaſmodic or convulſive Motions, which often, either before or during the Birth, invert the natural Situation of the Fœtus, and when the Mother is afflicted with an intenſe Heat, it is highly prejudicial to exhibit ſuch ſpirituous Subſtances; becauſe they hinder the Excluſion of the Infant, and excite a Fever, or Delirium, in the Mother: But, in ſuch Caſes, the moſt ſalutary Effects are produc'd by antiſpaſmodic and ſedative Medicines, which check and allay the Impetuoſity of the Motions: The moſt conſiderable Remedies of this Kind are, Saffron, Caſtor, the Gall of an Eel, Powders of Vipers, of human Secundines, and of Worms; the *Pilulæ Wildeganſii*, the Tops of white Lilies, and the Waters of the Flowers of the Lime-tree, of Elder, of the *Egyptian* Thorn, of white Lilies, and of Primroſes. It is, alſo, expedient, in ſuch Caſes,

when the Patient is plethoric, to open a Vein in the Arm, immediately before the Labour, leſt the Nerves of the Abdomen being compreſs'd by the redundant Blood, the Motion, not only of the Uterus, but, alſo, of the Muſcles ſubſervient to the Expulſion of the Fœtus, ſhould be ſuppreſs'd and hinder'd. Almoſt the ſame Method is to be us'd, when the *Lochia* are retain'd, in Pain ariſing from exceſſive Stricture, which, in Child-bed Women, is known from Pains of the Abdomen: When ſuch a Caſe happens, the lochial Diſcharge is not to be procur'd by forcing Medicines, but by Sedatives; for which Reaſon, *Etmuller*, in *Diſſert. de Vi Opii Diaphoretica*, greatly recommends Preparations of Opium for this Purpoſe: But if, on account of a Diminution of the conſtrictory Force of the uterine Fibres, the impure and ſtagnant Blood is not, after the Birth, duly evacuated from the Uterus, beſides internal Medicines which excite the Diſcharge of ſuperfluous Humours, nothing is more beneficial than a Clyſter prepar'd of uterine Herbs, ſuch as Southernwood, Pennyroyal, Roſemary, Mugwort, Baum, and Flowers of the Wall-flower, with the Addition of a ſmall Quantity of the Maſs for the balſamic Pills.

There is, therefore, in the Uterus a conſtrictory and relaxatory, which, in my Opinion, may be juſtly call'd a periſtaltic Motion; for whilſt one Part is contracted, another is dilated; by which reciprocal Motion every thing preternatural is effectually excluded from the Uterus. That Child-bed Women often complain of Flatulences burſting from the Uterus, is a Sign that a tenacious Humour, which, by the Heat, is reſolv'd into Vapours, remains in the Uterus; and that in the Subſtance of the Matrix this periſtaltic Motion is ſtill carry'd on: Beſides, that this alternate Motion of the Uterus, juſt as it happens to the Stomach in Vomiting, is ſometimes inverted, is certain, from this, that the menſtrual or lochial Blood, uſually diſcharg'd through the Vagina, is, on certain Occaſions, forc'd through the *Fallopian* Tubes into the Cavity of the Abdomen, a Circumſtance which always proves mortal. An Inſtance of this, Mr. *Ruyſch* has given us, in *Obſervat. Anatomico-chirurg. Obſ.* 84, & 85. It is, alſo, to be carefully obſerv'd, that, when the *Fundus* of the Uterus is cloſely contracted, and its inferior Part, together with the Vagina, too much relax'd, the Matrix itſelf may be ſo contorted and ſubverted, that Midwives are often deceiv'd, and imagine that a Fœtus ſtill remains in the Uterus. See *Ruyſch*, in the Work already quoted, *Obſ.* 93. Beſides, to the preternatural Motion of the Uterus, which is inverted from the external to the internal Parts, we ought, in my Opinion, to aſcribe thoſe violent and fatal Symptoms, which frequently afflict Child-bed Women, ſuch as Fevers, acute Pains, Convulſions, Deliriums, mortal Apoplexies, and Purples of the red and white Kind; becauſe all theſe Diſorders derive their Origins from the corrupted Blood which ought to be evacuated from the Uterus, repreſſed to the interior Parts, and becoming ſtagnant.

Hippocrates expreſly aſſigns, as the Cauſe of theſe Diſorders, an intercepted Paſſage of the Blood through the Uterus, in the following manner: "The Blood, returning from the Uterus, "and preſſing upon the Diaphragm, produces a Strangulation, "by a Retraction of the Uterus; when entering the Head, it "gives Riſe to Madneſs, Epilepſies, a Catochus, and Apo"plexies; when poſſeſſing the Thorax, it excites Coughs; "when ruſhing into the Heart, it produces Palpitations, Tre"mors, and ſometimes Syncopes; and when it enters the "Nerves, it gives Birth to Stupors, Immobilities, and Palſies." For all thoſe Symptoms, commonly call'd hyſteric, which frequently afflict Women, and have a great Agreement with the Symptoms of the ſpaſmodic and flatulent hypochondriac Diſorder, ariſe principally from a Fault of the Uterus; for there is a great Conſent between the Uterus and the principal Parts of the Body; and this Conſent is not ſo much to be accounted for from the Communication of Nerves, and the mutual Concurrence of the irregular Motions in the nervous Parts, as from the Syſtem of Blood-veſſels, and the diſturbed Motion of the Blood in them: For as in hypochondriac Patients, when the Blood, paſſing with Difficulty through the Liver, is accumulated in theſe Parts, eſpecially of the nervous Kind, ſuch as the Stomach and Inteſtines, to which the Ramifications of the *Vena Porta* are diſtributed, it, by its Preſſure and Diſtention, excites Spaſms, accompanied with violent Symptoms, ſo, alſo, in Women, when the Blood, becoming ſtagnant, is not freely conveyed through the Uterus, it regurgitates to the principal Parts of the Body, ſuch as the Stomach, and eſpecially the Inteſtines, Head, and Thorax; where, according to the Diverſity of the Parts, it injures their Functions, and induces various and violent Symptoms. Hence the moſt ſkilful and ſagacious Phyſicians, in all Diſorders peculiar to Women, have a particular Regard to the Uterus, the State of the Menſes, and the Circulation of the Blood through the Veſſels of the Matrix; whereas thoſe Phyſicians proceed in a prepoſterous Method, who preſcribe various Remedies, in order to remove the Symptoms; whilſt, at the ſame time, they overlook the Cauſe and Origin whence they proceeded.

We now come to conſider the Conſent between the Uterus and the *Inteſtinum Rectum*; and hæmorrhoidal Veins. With reſpect, then, to the Sympathy between the Uterus and hæmorrhoidal Veins, we muſt take notice of an anatomical Error common to thoſe who greatly extol Hæmorrhages and the hæmorrhoidal Diſcharges, whilſt they imagine that the internal hæmorrhoidal Veins, which are Ramifications of the *Vena Portæ*, diſtribute Branches to the Uterus, and eſpecially to the Vagina; whereas *Saltzmannus*, in *Diſſert. de Vena Portæ*, has clearly demonſtrated, that only the external hæmorrhoidal Veins ſend to the Matrix and Vagina an incredible Number of ſmall Branches, connected with the internal Hæmorrhoidals by a mutual Anaſtomoſis: When this Connexion of the Veſſels is known, it is eaſy to render a Reaſon why, in plethoric Women, the Blood ſeeks a Paſſage not only from the Uterus, but, alſo, ſometimes, from the Veins of the Anus: And when the Paſſage this Way is precluded, the ſtagnant Blood not only produces Tumours, called the blind Hæmorrhoids, but, alſo, lays a Foundation for more Diſorders; ſuch as oppreſſive fixed Pains in the *Os Sacrum*, and other Symptoms familiar to thoſe who labour under a Suppreſſion of the Hæmorrhoids. It is, alſo, certain, that in old Women, who have no longer their menſtrual Evacuations, there often ariſes, if not an hæmorrhoidal Diſcharge, yet, at leaſt, an Effort of Nature that way, accompanied with the ſeveral Diſorders uſually accompanying a Suppreſſion of the Hæmorrhoids. It is, alſo, owing to this Connexion of the Veſſels, that, in the firſt Days after Delivery, knotty Protuberances of the hæmorrhoidal Veins frequently ariſe in the Anus, and excite an intenſe Heat; and theſe Protuberances certainly draw their Origin from the ſtrong Efforts of the Patient, forcing a large Quantity of Blood to the Uterus and its Veſſels.

The Conſent between the Vagina and *Inteſtinum Rectum*, is ſufficiently obvious from this, that their Membranes are ſo cloſely connected, and adhering to each other, that they can hardly, by the moſt cautious Hand, be ſeparated, without Dilaceration. This is the Reaſon why a *Teneſmus*, a Symptom familiar to thoſe labouring under a Dyſentery, eaſily diſpoſes the Vagina to fall down, and often proves the Cauſe of Abortion. Hence it is that acrid Suppoſitories, eſpecially ſuch as are prepared of draſtic Purgatives, contribute much to Abortion; and that Clyſters, prepared of uterine, nervous, and gently-ſtimulating Medicines, are very efficacious in expelling Moles, or grumous Blood, from the Uterus; as, alſo, in recalling the Menſes, or Lochia, when ſuppreſſed. I ſhall now ſubjoin ſome Rules and Cautions, highly uſeful in Practice.

1. Pregnant Women, when plethoric, are by nothing better fortified againſt Diſeaſes, and the Fœtus preſerved ſound, and vigorous, than by Veneſection, about the third, ſeventh, and ninth Months.

2. It is an Error to imagine that Veneſection in the Foot is prejudicial to pregnant Women, becauſe it procures Abortion.

3. Veneſection is often uſed with great Benefit, when the Patient is afflicted with Pains of the Back, hyſteric Symptoms, or Sciatic Pains.

4. Veneſection in a Suppreſſion of the Lochia, or when the Purples remain in the internal Parts of the Body, often prevents the Danger of ſpeedy Death.

4. The Suppreſſion and Diminution of the Menſes often ariſe from a Plethora, which is removed by Veneſection; ſo that, immediately after it, the Pulſe becomes ſtronger, and the Blood is more freely conveyed through the Uterus.

6. When a continual or intermittent Fever ſeizes either a pregnant or Child-bed Woman, Veneſection is never prejudicial, but often highly neceſſary.

7. It is expedient, in the firſt Days after Labour, to exhibit the *Pilulæ Balſamicæ*, by the Uſe of which the Lochial Diſcharge is not only promoted, but, alſo, many Sordes, collected during the time of Geſtation, are evacuated by Stool.

8. Preparations of Raiſins, Manna, Rhubarb, and Tartar, are more proper for pregnant Women than other Laxatives.

9. In order to remove Sterility, the only Intention of Cure is, to reſtore the Tone of the Uterus, and reduce the Menſes, and Motion of the Blood through the Matrix, to a natural State.

10. Almoſt all Diſeaſes, ariſing from a Diſorder of the Uterus, if capable either of an Alleviation, or a Cure, require Veneſection, gently-laxative balſamic Pills, Baths, both natural and artificial, duly-prepared Chalybeates, gentle Antiſpaſmodics, Carminatives, and the Uſe of temperate mineral Waters.

11. *Peruvian* Bark, in Conjunction with other proper Remedies, eſpecially Powder of Chamomile-flowers, if exhibited prudently, and at a proper time, in Intermittents, is not prejudicial to pregnant Women, but proves a moſt ſalutary Remedy.

12. Ob-

12. Obſtinate Diſorders ariſing from a Fault of the Uterus, often require external Applications, ſuch as Fumigations, Injections, uterine Clyſters, Fomentations, Epithems, and Baths, that the Virtues of Medicines may be the ſooner conveyed to the Part affected.

13. Pregnant and Child-bed Women ought to be very careful with reſpect to their Diet, Regimen, and Method of Life.

14. Pregnant and Child-bed Women ought carefully to avoid external Cold, and internal Refrigeration, by means of purgative Medicines, and all aſtringent Acids; nor ought they to uſe too large Quantities of Aliments. But as Reſt of Body is friendly to Child-bed Women, ſo it is prejudicial to ſuch as are pregnant, who ought for that Reaſon to uſe proper Exercife.

Of an Inflammation of the Uterus.

The peculiar Fabric of the *Uterus*, the ſurpriſing Elaſticity of the Fibres of its whole Subſtance, the Number of its Blood-veſſels, and their winding ſerpentine Direction, the glandulous and nervous Texture, together with the exquiſite Senſation of the Neck, and *internal Orifice of the Uterus*, are Circumſtances which render it ſubject to various Diſorders, eſpecially acute and dangerous Inflammations, together with Abſceſſes, and malignant Ulcers ariſing thence. Beſides, becauſe, not ſo much on account of the Communication and Senſibility of the Nerves, as the intercepted Motion of the Blood through the fibrous and vaſcular Compages of the Uterus, its Motion in the other Parts of the Body, is, alſo, greatly diſturbed and perverted, hence there is a great Conſent between the Uterus and the more noble Parts of the Body, ſuch as the Head, the Breaſt, the Præcordia, the Stomach, and whole nervous Syſtem; ſo that when the Uterus is diſordered, or inflamed, violent Symptoms happen in the adjacent and remote Parts of the Body.

Among the other Diſorders incident to the Uterus, an Inflammation frequently happens, and may be known from the Heat and fixed Pain in the Groins, accompanied with an acute Fever, a Pain of the Loins, and lower Part of the Belly, an Inflation of the Abdomen, a Stimulus to diſcharge the Urine and Excrements, an Heat and Difficulty of Urine, together with other violent Symptoms in the Præcordia, Head, and Breaſt. Though the Moderns take little Notice of this Diſorder, yet ſome of the Antients were very full and accurate in deſcribing it: Thus, *Aetius* ſpeaks of it in the following Manner: "An Inflammation of the Uterus may "be produced by various Cauſes, ſuch as Blows, Suppreſſions "of the Menſes, external Cold, Inflations, Abortions, and "hard Labours. An Inflammation of the Uterus is ſucceeded "by an acute Fever, a Pain of the Head, and its Tendons, "a Pain in the Bottoms of the Eyes, and in the Joints of the "Arms and Fingers, a Detraction and Declination of the "Neck, a Diſorder of the Stomach in conſequence of its "Conſent with the Uterus, a Contraction of the Mouth of "the Uterus, and a ſmall and denſe Pulſe. If the whole "Uterus is inflamed, there is a violent pulſatory Motion in "all its Parts. If its poſterior Parts are only inflamed, there "is a Pain about the Loins, and the Fæces are retained on ac-"count of the Compreſſion of the Inteſtinum Rectum. If "on the contrary, its anterior Parts are inflamed, there is a "Pain about the Groin, a Strangury, and difficult Diſcharge "of the Urine, ariſing from a Compreſſion of the Bladder. "When the Sides of the Uterus are inflamed, the Groins are "rendered tenſe, and the Thighs and Legs oppreſſed. When "its Bottom is inflamed, there is a Pain and Tumor princi-"pally about the Navel. When its Neck, or inner Orifice "is inflamed, there is a Pain in the ſuperior Part of the Ab-"domen, and, upon introducing the Finger into the Vagina, "the Mouth of the Uterus appears hard, and makes a conſi-"derable Reſiſtance."

An Inflammation of the Uterus may be juſtly divided into ſlight or ſuperficial, and violent or profound; the former frequently happens to Childbed Women, is eaſily produced, and moſt frequently ſucceeds the Milk Fever. This Species admits of a Cure, if prudently treated, and is eaſily reſolved in a few Days. But the violent, or profound Inflammation of the Uterus, which is accompanied with an intenſe Fever, and a Train of terrible Symptoms, whoſe Vehemence does not remit, often proves mortal on the ſeventh, ninth, or eleventh Day, eſpecially when the White Purples ſupervene, which are always a bad Sign, ſince they derive their Origin from a corrupted, putrid, and vapeſcent Blood and Serum lodged in the Uterus, and are even a Proof, that the Uterus is already corrupted and ſphacelated.

The material proximate Cauſe of an Inflammation of the Uterus is an unequal Circulation of the Blood through the uterine Veſſels; for when the ſmall Veſſels are obſtructed, contracted, and ſpaſmodically conſtricted, the Blood is with a greater Impetuoſity and Swiftneſs convey'd through the adjacent Veſſels, and their lateral Ramifications, otherwiſe not ſuſceptible of Blood. Hence ariſe a Tumor, Redneſs, and Heat, together with a Preſſure of the nervous Coat of the Uterus. The Uterus is diſpoſed to Inflammations by Blows, Contuſions, external Wounds, a Plethora, a Cacochymy, a Suppreſſion of the Menſes, or Lochia, a copious Defluxion of Blood to the Uterus, a difficult Labour, the Paſſions of the Mind, eſpecially Anger, and Frights, exceſſive Vomiting, or ſtrong Efforts to it, Refrigeration of the lower Part of the Abdomen after violent Exerciſe in plethoric Habits, the drinking cold Liquors, eſpecially during the menſtrual, hæmorrhoidal, or Lochial Diſcharges. Convulſive Colics, alſo, and violent ſpaſmodic, and hyſteric Affections, produce Inflammations of the Uterus.

Inflammations of the Uterus are never more incident to Women, than when they are in Child-bed; for, after the Birth, the Uterus freed from its Load, by its elaſtic Force is again reduced to a ſmaller Space, and gradually contracts itſelf. Hence the dilated Veſſels of the Uterus are contracted, the Blood contained in them is expreſſed from their open Mouths, before continuous with the Secundines, and evacuated under the Name of *Lochia*, to the great Benefit of the Patient. But at the ſame time, this Contraction of the Veſſels directs the Motion and Courſe of the Blood elſewhere, that is, from the Uterus and inferior Parts, to the ſuperior Parts and Breaſts; and this generally happens about the third Day, with a conſiderable febrile Commotion, generally called the *Milk Fever*. If, therefore, the Lochial Diſcharge is prevented by ſpaſmodic Strictures of the Uterus, it not only excites a dangerous and inflammatory Stagnation in the Uterus itſelf, but, alſo, increaſes this uſual Conveyance of the Blood from the inferior to the ſuperior Parts, both with reſpect to its Vehemence and Quantity. In this Caſe the ſpaſmodic Strictures of the Abdomen are violent, the Diſcharge of the Blood, or mucid Humour from the Uterus is ſtopt, the Patient becomes coſtive, the Feet are rendered cold, there is a Stimulus to diſcharge the Urine, which is evacuated with Pain; the Countenance becomes red and tumid the Eyes ſparkle, certain Drops ſometimes fall from the Noſtrils, the Mind is reſtleſs, the Sleep either none at all, or diſturbed with frightful Dreams; and at laſt theſe violent Symptoms, a difficult Reſpiration, Deliquiums, Convulſions, and a phrenitic Delirium, often ſuddenly put an End to the Patient's Life.

Theſe Circumſtances are accurately deſcribed by *Hippocrates*, in *Lib.* 1. *de Morb. Mulier.* in the following Manner: "If, ſays he, the Uterus of the Child-bed Woman is "inflamed, the Abdomen becomes hot and large, there is a "Suffocation about the Præcordia; and when the Lochia are "retained in conſequence of Cold, the Uterus is diſtended." And in *Lib.* 2. *de Morb. Mulier.* he tells us, "That if an Ery-"ſipelas happens in the Uterus, the Breaſt is affected by it, "the Abdomen becomes tumid and cold, the Patient is ſeized "with a violent Fever and Rigor, breathes thick, and is ſub-"jected to Deliquiums and Weakneſs, a Pain of the whole "Body, Dejectedneſs and Inconſtancy of Mind. The Diſorder "aſcends from the inferior Part of the Abdomen to the Loins, "Back, Præcordia, Breaſt, Neck, Head, and Stomach, ſo "that the Patient ſeems dead." But 'tis certain from Experience, that pregnant Women of tender and delicate Habits, prone to violent Commotions of Mind, ſubject to ſpaſmodic and flatulent Diſorders, afflicted with an irregular State of the Menſes, or with Coſtiveneſs after Labour, eaſily fall into a Suppreſſion of the Lochia, accompanied with a dangerous and acute uterine Fever. Sometimes, alſo, an Inflammation of the Uterus ariſes from a Retention of the Whole, or ſome Part, of the Secundines; for when the Secundines are retained, the Excluſion of the Blood from the Uterus is not only prevented, but, alſo, the ſucceeding Putrefaction excites a Fever, or renders it worſe, if already formed.

Now, as in all Inflammations the ſtagnant Humour, if not diſcuſſed, putrefies, and degenerates either into a ſphacelous, or ulcerous Corruption; ſo the ſame, alſo, happens in Inflammations of the Uterus. An Inflammation of the Uterus, which degenerates into a Sphacelus, is ſoon mortal, and is moſt incident to Child-bed Women, in whom, when diſſected, the Uterus and Vagina are generally found hard, and of a dark-brown Colour. But an Inflammation of the Uterus, which terminates in a Suppuration, or Ulceration, is of a more chronical Nature, and happens principally out of a State of Child-bed. This ſuppuratory Inflammation of the Uterus is principally incident to Women of ſanguine, ſoft, and ſpongious Habits, eſpecially if they have been afflicted with a bloody Fluor Albus, and have put an unſeaſonable Stop to it by Aſtringents. It is, alſo, frequently incident to thoſe Women whoſe Blood is grol-

and impure, who uſe inſalutary Aliments, ſweet Summer Fruits, and Sweet-meats, who expoſe their inferior Parts to the Cold, eſpecially when the Body is over-heated, who are afflicted with Sorrow, who are prevented from ſatisfying their Inclinations to venereal Commerce by Enjoyment, who neglect uſual Veneſections, or who being old, lead a quiet and melancholy Life. And in ſuch Women the Inflammation happens more frequently in the Neck and internal Orifice, which conſiſts of nervous Fibres ſpirally interwoven, than in the Bottom of the Uterus; for which Reaſon there is an intenſe and burning Pain in the Pubes, accompanied with a difficult Diſcharge of Urine. The Signs of an Abſceſs of the Uterus are by *Hippocrates*, in *Lib.* 1. *de Morb. Mulier.* enumerated in the following Manner: "If, "ſays he, the Uterus is ulcerated, Blood and Pus are diſ-"charged, a fetid Smell of the Parts ariſes, an acute Pain "ſeizes the Loins, Groin, and lower Part of the Abdomen. "The Pain aſcends upwards to the ſoft Parts of the Sides, "the Ribs, the Scapulæ, and ſometimes to the Clavicles. "The Patient is ſeized with a violent Head-ach, and Deliri-"um: But, in Proceſs of Time, ſhe becomes tumid, weak, "ſubject to Deliquiums, ſlight Fevers, and Refrigerations; "but *her Legs are more conſiderably ſwelled than the other Parts* "of her Body. This Diſorder ſucceeds Abortion, if the cor-"rupted and putrefied Humours left behind are not duly eva-"cuated, and the whole Body is exceſſively hot. It is, alſo, "brought on by uterine Fluxes, the Matter of which is of an "acrid or bilious Quality." But for the moſt part, an Ulcer of the Uterus degenerates into a Gangrene and Sphacelus, and by that means proves mortal. It ſometimes, however, happens, that an Apoſtem formed in the Uterus, breaks internally, and a white fetid Sanies is copiouſly diſcharged, by which means the Patient is preſerved. See *Foreſtus, Lib.* 28. *Obſ.* 44.

If the exterior Part of the Uterus is inflamed by external Cold, the Inflammation eaſily degenerates into a Scirrhus, which becoming ulcerated, is juſtly called a *Cancer of the Uterus*, and is incurable. It, alſo, frequently happens, that the Glands about the Neck of the Uterus, and eſpecially its internal Orifice, are changed into a Scirrhus, which at laſt, degenerates into an ulcerous Inflammation, which, like an ulcerated Cancer, is, alſo, incurable. Though the Moderns have taken little Notice of this Diſorder, yet I have frequently ſeen Inſtances of it, and found it accompanied with the ſame Symptoms, exactly enumerated by *Actius, Tetrabib.* 4. *Serm.* 4. *C.* 94. in the following manner: "Cancers in the Uterus are ſometimes with, and "ſometimes without, an Ulceration; an hard, unequal, pro-"minent Tumor, of a diſagreeable, red, and ſometimes ſub-"livid Colour, is found about the Mouth of the Uterus. "There is a violent Pain in the Groins, ſuperior Part of the "Abdomen, and Loins, whilſt the Parts, originally affected, "can hardly bear to be touched, or treated in the different "Manners neceſſary for a Cure. But if the Cancer is of the "exulcerated Kind, beſides Pains, Hardneſs and Tumor, cor-"roded and unequal Ulcers appear, which have generally "ſordid, tumid, and whitiſh Lips, and are covered with un-"ſeemly Cruſts. But the Ulcers which ſeem moſt pure, ap-"pear feculent, livid, red, and bloody. From ſuch Ulcers "there is continually diſcharged a thin, aqueous, black, or yel-"low fetid Sanies, and ſometimes Blood, accompanied with the "other Signs of an inflamed Uterus." This Diſorder, according to *Hippocrates*, is incurable; but it is to be mitigated by Inſeſſions prepared with Fenugreek and Mallows, and by Cataplaſms of a like Nature.

The CURE.

As an Inflammation of the Uterus is never more frequent than in Child-bed Women, and after Abortion, and is brought on either by the unſkilful Management of Midwives in difficult Labours, and their too rough handling the Mother, or by the violent Efforts during Labour, which force the Blood, eſpecially of the impure Kind, to the Uterus, or by an Obſtruction of the Lochia, by means of Pains, hyſteric Spaſms, a Fright, or Refrigeration, it is neceſſary, both for the Purpoſes of Prevention, and Cure, that the Phyſician ſhould be well acquainted with all theſe Cauſes. But becauſe it is far more eaſy to prevent this Diſorder when approaching, than to cure it when preſent, the Phyſician ought, by all means, to uſe his utmoſt Endeavours to put a timely Stop to it, and prevent its Approach if poſſible.

Without conſidering thoſe Diſorders of the Uterus, which are brought on by external and violent Cauſes, we ſhall only obſerve, that nothing more frequently occurs in Practice, than an inflammatory Fever of the Uterus after Labour, on account of a too ſcanty, or totally ſuppreſſed Diſcharge of the Lochia. Hence the Phyſician is in the firſt Days after Delivery, to take care that the Lochia be duly evacuated; for which Purpoſe he is to direct his principal Intentions to the Removal of thoſe Cauſes which obſtruct the Lochial Flux. Now it is ſufficiently certain, that during a long and violent Labour, there is ſo violent a Commotion and Exagitation both of the ſolid and fluid Parts, that from the Quickneſs of the Pulſe, the Heat of the whole Body, the Thirſt, and Inquietude, we may juſtly conclude that a Fever is preſent, during which febrile Commotion, little or none of the putrid and bloody Recrements is evacuated from the Uterus. Hence, after the Labour, the Phyſician is to uſe his Endeavours to compoſe and mitigate this impetuous Commotion of the Parts. This Intention is beſt anſwered by keeping the Patient in a State of Reſt, the Uſe of a temperate diaphoretic Regimen, and the Exhibition of diluent and gently cooling Medicines. But becauſe during Labour, which is only performed by ſpaſmodic and convulſive Strictures ariſing from the ſpinal Marrow, the Spaſms, and painful Strictures, are by Conſent, convey'd to the Inteſtines; and becauſe theſe Strictures remain ſome time after the Labour, and in conſequence of the ſame Conſent, by conſtricting the muſcular and nervous Fibres of the Uterus, obſtruct the free Circulation of the Blood, the Phyſician is therefore carefully to allay and ſooth them: For this Purpoſe,

> Take of the Pulvis Marchionis, and Crabs-eyes, each one Dram; of diaphoretic Antimony, half a Dram; and of pure Nitre, ſixteen Grains: Reduce to a Powder; of which the fourth Part is to be taken for a Doſe, adding, if the hyſteric Spaſms are at the ſame time very violent, four or ſix Grains of the Powder of Caſtor, to be taken in the Water of common Chamomile-flowers diſtilled with Ale prepared of Wheat.

This Intention is, alſo, anſwered by the Oil expreſſed without Fire, from recent ſweet Almonds, which either alone, or mixed with a fourth Part of Sperma Ceti, may be exhibited to the Quantity of an Ounce, or half an Ounce, in Broth prepared of Pullets, or in Water-gruel. Externally the whole Abdomen is to be anointed with a Liniment thus prepared:

> Take of the Oils of Dill, Chamomile, and white Lilies, each one Ounce; of the Oil of Caraway, two Drams; or of the Oil of Camphire, one Dram: Make into a Liniment, for anointing the Abdomen; after the Uſe of which, apply a warm folded Cloth.

When the febrile Motion is thus compoſed, in order to promote the Lochial Diſcharge, there is hardly any more efficacious Medicine, than the Maſs of Pills prepared in Imitation of *Becher's*, of bitter Extracts, reſinous temperate Gums, and Aloes duly corrected. On the ſecond Day, therefore, after Delivery, let fifteen Grains of this Medicine, in the Form of Pills, other Circumſtances being alike, be exhibited in the Morning or Evening, and continued for five or eight Days, according as the Circumſtances of the Patient require. This is an highly mild and proper Evacuant; for by corroborating the Tone of the Inteſtines and Uterus, which is weakened by the exceſſive Diſtenſion, and at the ſame time, by gently ſtimulating, it frees the Abdomen and Inteſtines from Sordes, and the Uterus from ſtagnant and corrupted Blood, by which means it excellently prevents the Inflammation, the Fever, and other violent Symptoms ariſing from a Retention of the recrementitious Sordes. This Medicine is, alſo, of ſingular Uſe when the Secundines, or any Part of them, or any other foreign Subſtance, is to be expelled from the Uterus.

But if the Intentions of the Phyſician are not anſwered by theſe means; if a continual Fever preys upon the Patient; if her Abdomen is diſtended with Flatulences; if the Lochia are retain'd, and violent Spaſms conveyed to the ſuperior Parts, another Method is to be uſed; for the Redundance of Blood accumulated during Geſtation, is to be diminiſhed by Veneſection, not in the Arm, but in the Foot; for Spaſms often ariſe from an exceſſive Diſtenſion of the Veſſels, and the Quantity of the ſuperfluous Blood by diſtending the Compages of the Uterus, diminiſhes and prevents its ſyſtaltic and and expulſive Power. Hence Veneſection is of the greateſt Importance to promote the Lochial Diſcharge, and prevent Inflammations: As in *France* Veneſection is more often uſed for this Purpoſe than it ought, ſo in *Germany* it is totally rejected; ſo that many die of an inflammatory Fever of the Uterus, who might have been preſerved by ſeaſonable Veneſection.

Beſides Veneſection, when an inflammatory Fever is already preſent, the ſtagnant Blood is to be put in Motion, the thick Humours rendered fluxile, and the Stagnation diſcuſſed: In order to obtain this End,

> Take of the Waters of Chervil, Carduus Benedictus, Scordium, Elder-flowers, *Egyptian* Thorn-flowers, and diſtilled Vinegar, each one Ounce and an half; of Crabs-

eyes, one Dram and an half; of diaphoretic Antimony, or Bezoardic Mineral, half a Dram; of the Spiritus Nitri Dulcis, or the Anodyne Mineral Liquor, twenty Drops; and of the Syrup of Carduus Benedictus, two Drams: Make into a Mixture; of which let the Patient take two or three Spoonfuls every two Hours.

For ordinary Drink let her use weak Broth prepared with Fowls, the Roots of Vipers-grass, and Succory, together with the Shavings of Hartshorn, adding at Pleasure the Juice of Oranges. It is, also, expedient now-and-then to exhibit an Infusion prepared of the Herbs Pauls Betony, Scabious, Sow-thistle, the Flowers of Clary, and common Chamomile, together with the Seeds of Fennel; nor are we to omit the temperating and resolvent Powders prepared of Crabs-eyes, a Solution of Crabs-eyes, Nitre, and Sal Polychrestus. Powders of this Kind are commodious, interposed with *Becher*'s Pills, or others like them, in order to promote the Lochial Discharge, and derive the Impetus of the Blood from the Head. Clysters are, also, to be used, and may consist either of sweet Whey, or Decoctions of the Flowers of common Chamomile, the Herbs Mugwort, Sage, Clary, and *French* Mercury, with an Addition of Honey, Nitre, and the Fat of Hens.

When out of a State of Child-bed, in Women of impure Habits, various Causes concur to produce an Inflammation, not so much in the Bottom as in the Neck of the Uterus and Vagina, besides the internal Remedies already mentioned, external Medicines are, also, to be used, such as Epithems applied to the Region of the Pubes, uterine Injections prepared of proper Ingredients, Pessaries, and, on account of the Vicinity of the Parts, Suppositories introduced into the Anus. An Epithem may be prepared thus:

Take of the Aqua Sclopetaria, four Ounces; of the Essence of Saffron, and camphorated Spirit of Wine, each two Ounces; and of Nitre dissolved in Elder-flower Water, one Dram; and, according as Circumstances require, let these be mixed with Vinegar of Rue, or of Scordium, and applied with several Folds of Linen Cloth.

For an Injection I commend either Womens, or Asses Milk boiled with Elder-flowers, Myrrh, and Saffron, adding a little Nitre. The most uneasy Symptom of this Disorder, which is a Tenesmus, is, besides by emollient Infessions, excellently alleviated by Oil of sweet Almonds, or a Mucilage of the Seeds of Flea-bane, or Fenugreek; two Ounces of which, with an Addition of twelve Grains of the Extract of Saffron may be injected into the Anus; and all these Remedies are useful when the Inflammation has degenerated into a Suppuration.

It, also, frequently happens, that when a long-continued *Fluor Albus*, especially of the bloody Kind, is ill treated, or preposterously stopt, the Uterus is affected with a Tumor, Pain, and inflammatory Fever, which sometimes terminates in a Suppuration. In this Case the Cure is highly difficult and perplexed, especially when the Matter flows not from the external Glands, but the internal Substance of the Uterus. When this Disorder is chronical, I know nothing more efficacious than the mild *Empsan* and *Caroline* Waters, which not only effectually dissolve the stagnant Humours, but, also, corroborate the Part affected. But the Patient is to abstain from astringent Baths, and from the stronger *Caroline* Waters, which on account of their calcarious and chalybeate Earth, are of an astringent and repellent Nature. But Infessions prepared of uterine and aromatic Herbs, boiled in sweet Water, are very beneficial. When the Vessels are thus relaxed, and the Humours diluted, we may with Advantage exhibit the *Pilulæ Becherianæ*, which are the most considerable of all the uterine Specifics. Nor is *Hippocrates*'s Method of curing an Ulcer in the Uterus to be rejected, which in *Lib.* 1. *de Morb. Mulier.* he gives us in the following manner: "When "this Disorder happens, bathe the Patient in large Quantities "of warm Water, and apply tepid Substances to the Part "affected. But if Pains possess the superior Parts, the whole "Body is to be fomented, and a purgative Potion exhibited; "and, if boiled Whey can be had, let the Patient drink it for "five Days: But if Whey cannot be had, let her drink boiled "Asses Milk for three or four Days. After the Use of the "Whey or Milk, let her drink Water, and use proper Aliments, such as tender and recent Mutton, the Flesh of Fowls, "Beet, and Gourds; but she is carefully to abstain from all saline, acrid, and Sea Substances, as, also, from the Flesh of "Goats." And certainly Whey, and Asses Milk, are highly beneficial, not only in obtunding the Acrimony of the Humours, but, also, in correcting the hectic Heats, with which Patients labouring under this Disorder, are greatly afflicted.

An Inflammation of the Uterus induced by an external Cause, and accompanied with a Fever, a Pain of the Groins, a difficult Discharge of Urine, and Spasms in remote Parts, calls for Venesection, not only in due time, but, also, repeated first in the Arm, and then in the Foot. In this Species of Inflammation, it is, also, requisite the Body should be rendered soluble by Clysters, which in all Disorders of the Uterus, are of singular Use. Externally we are to apply a Plaister prepared of Melilot, two Ounces; Sperma Ceti, half an Ounce; Gum Ammoniac, two Drams; Saffron, one Dram; and Camphire half a Dram; not omitting the internal Exhibition of mild, diaphoretic, and discutient Medicines.

Since many Child-bed Women die of an uterine Fever, especially if they contain a large Quantity of gross impure Blood, hence it is certainly of great Importance, in order to prevent these capital Disorders, for pregnant Women, partly by a salutary Regimen, and partly by proper Remedies, to preserve both their Solids and Fluids in a due Temperature, Quantity, and Equilibrium of Motion; for such as is the Nature of the Patients, even of Child-bed Women, such is the Struggle of Nature against the Disease, and such is the Cure, in which Nature does more than Art. In order therefore to prevent this terrible Disorder, it is necessary that Women, during Gestation, should consult their Health both by seasonable Venesections, and proper Laxatives, especially Preparations of Rhubarb. They ought, also, to use a moderate Diet of a laudable Kind, preserve a due Tranquility of Mind, and drink diluting Potions, which have a Tendency to support and promote Perspiration. Besides, as Inflammations of the Uterus in Child-bed Women, especially those of sanguine Constitutions, and those who in the last Months have neglected Venesection, frequently proceed from hot and spirituous Liquors, aromatic Wines, and such as are impregnated with Saffron, both Nurses and Patients are to be seriously advised to abstain from these Liquors, which exagitate the Blood, and rather by Venesection, and the Use of Baths, for two or three Weeks before the Labour, to procure a free Circulation of the Blood through the Uterus, and its easy Discharge after Delivery.

In no Disorder are Commotions of Mind, especially by Frights and Anger, so prejudicial as in Inflammations of the Uterus. Nor is Refrigeration of the Abdomen and Groins in any Case so hurtful, as after Abortion and Delivery; for Child-bed Women, on account of the Solution of Continuity in their Fibres, the Dilaceration of the Vessels, and the Extravasation of the Humours, are to be considered as Persons severely wounded. But it is sufficiently known how easily these Causes may induce an Inflammation of the wounded Part, and consequently of the Uterus. Hence, not only Child-bed Women, but, also, those who labour under any Disorder of the Uterus, are to be carefully advised to abstain from such hot and spirituous Liquors.

In order to promote the suppressed Lochial Discharge, we are never to exhibit drastic Emmenagogues, such as Preparations of Saffron, Myrrh, Amber, Aloes, or hot Aromatics, or saline stimulating Medicines, much less, if immediately after their Labour, there is still an Impetus of the Motions; for these rather increase the Fever, heighten the Spasms, condense the Blood in the Uterus, by carrying off its moist Parts, which renders it unfit for Evacuation, and dry and obstruct the Emunctories more than they were before. But, when the Spasms begin to be relaxed, the Pains to remit, and the Pores to become open, then moderate Emmenagogues, and such Medicines as restore the Tone of the Parts, are to be exhibited. The best of this Kind are, Solutions of Amber, Myrrh, Rhubarb, and Saffron, not with Spirit of Wine, but with an aqueous and lixivious Menstruum; as, also, Baum-water, or gently spirituous Water of Mugwort, such as that which is distilled with Ale prepared of Wheat, exhibited frequently, though in small Doses.

Venesection is, also, one of the most considerable Remedies for recalling the Lochial Discharge; nor, if it is indicated, let the Physician be terrified from ordering it by the Violence of the Symptoms, or even when the Purples appear. See PURPURA. But when provident Nature by profuse Sweats, or Stools, in some measure, makes Amends for the Cessation or scanty Discharge of the Lochia, we are to abstain from such Medicines as excite the Lochial Evacuation.

When a viscid, yellow, and bloody Humour is evacuated, it is a pretty sure Sign, that the Substance of the Uterus is injured, and that an Inflammation and Ulceration are approaching. In order, therefore, to prevent an Inflammation, or remove it when already present, frequent Purgings with Rhubarb, Tamarinds, and Manna, are both safe and necessary, in order to divert the peccant Humours from the Uterus. This Practice is of such Importance to the Cure, that *Forestus*, in *Lib.* 29. *Obs.* 48. tells us, that he cured a Woman of Distinction of an Ulcer in the Uterus, by giving her every fourth Day, five Ounces of a Decoction of Sena, Epithymum, red Roses, and *Indian* Myrobalans, edulcorated with Sugar, ordering her at the same time, to have abstergent Decoctions injected into the

Uterus

Uterus. If an Ulcer of the Uterus is curable, after the Uſe of gentle Purgatives for ſome Days, a Decoction of Sanders, Maſtich-tree, Sarſaparilla, Mint, Epithymum, Liquorice-root, and Roſe-wood, drank for twenty-five Days, with a ſudorific Regimen, is of conſiderable Service. See *Sylvaticus*, *Cent.* 4. *Obſ.* 48.

When an Ulcer of the Uterus reſembles the Nature of an ulcerated Cancer, a putrid Sanies, together with corrupted Shreds of the Uterus, are evacuated with a fetid Smell, intenſe Pain, and a Train of violent Symptoms; and, in this Caſe, the Diſorder is generally incurable; demulcent and lenitive Medicines are, however, only to be uſed. If any Hope of a Cure ſtill remains, I recommend the drinking of Milk, eſpecially that of Aſſes; as, alſo, the Uſe of temperate mineral Waters; ſuch as the *Selteran* Springs, and thoſe of *Wildungen*; interpoſing, Morning and Evening, a Bath of ſweet Water with Bran, in which the Patient is to ſit for an Hour, or longer. No acrid, hot, and ſtimulating Medicines, are to be exhibited internally. In Abſceſſes, and Ulcers of the Uterus, we are, alſo, cautiouſly to uſe Aſtringents and Repellents, ſince by theſe a Scirrhus is eaſily induced. Injections of Goats Milk, Saffron, and Elder-flower-water, produce excellent Effects. *Hippocrates* recommends the Uſe of Cabbage; but the Juice of red Beets, frequently injected warm, is better.

An exulcerated Cancer of the Uterus is frequently accompanied with an intenſe Pain, which deſtroys the Strength, and totally prevents Sleep. This Pain is beſt allayed by Anodynes; ſuch as the Extracts of Saffron and Poppies, the *Pilulæ de Styrace*, the *Pilulæ de Cynogloſſo*, the *Pilulæ Wildeganſii*, the *Pilulæ Matthæi*, and the *Pilulæ Starkii*. *Riverius*, in *Prax. Cap.* 10. ſpeaks in the following manner: "All theſe Things "are ſometimes inſufficient to allay the intenſe Pain, which, "on certain Occaſions, abſolutely deprives the Patient of Reſt "and Sleep. Hence we are frequently obliged to have Re"courſe to Narcotics, which, in this Diſorder, are not hurtful, "on account of the intenſe Heat of the Humours: And I my"ſelf knew a Woman labouring under a Cancer of the Breaſt, "who, for four Months, daily took two or three Grains of "*Laudanum*, from which ſhe obtained great Relief." *Frederic Hoffman.*

UTRICARIA. The Name of a Plant which grows at the Cape of *Good Hope*, to which I find no medicinal Virtues aſcribed. *Raii Hiſt. Plant.*

UTRICULUS. The Uterus is ſometimes thus call'd.

UTRIFORMIS ABSCESSUS. The ſame as OEDEMOSARCOMA.

UTRUS. A Name for the *Iſatis*, Woad. *Marcellus Empiricus*, *C.* 23.

UTY *Braſilienſibus*. The Name of a Tree which grows in *Braſil*, of no Uſe in Medicine. *Raii Hiſt. Plant.*

UVA CRISPA. See GROSSULARIA.

UVA GRUINA. Offic. *Vitis Idæa paluſtris Virginiana, fructu majore*, Raii Hiſt. 1. 685. *Vitis Idæa paluſtris Americana, oblongis ſplendentibus foliis, fructu grandiore; rubro, pluribus intus acinis referto.* Pluk. Almag. 392. Phytog. Tab. 320. f. 6. CRANE-BERRIES.

They are imported from *New England*, and are ſuppoſed to be excellent againſt the Scurvy: They are, alſo, of ſome culinary Service, among us.

UVA MARINA. A Name for the *Ephedra*; *maritima*; *major*; and for the *Ephedra*; *maritima*; *minor*.

UVA PASSA MAJOR. See VITIS.

UVA PASSA MINOR. See VITIS.

UVA URSI.

The Characters are;

The Calyx is very ſmall, and, as it were, denticulated; the Flower is monopetalous, and Pitcher-ſhaped; and the Ovary in the Centre of the Calyx becomes a ſpherical Berry, containing a Multitude of oblong Seeds.

Boerhaave mentions but one Sort of *Uva Urſi*, which is;

Uva Urſi. *Tourn. Inſt.* 599. *Boerh. Ind. A.* 2. 219. *Vitis Idæa.* Offic. *Vitis Idæa foliis carnoſis & velut punctatis, ſive Idæa Radix Dioſcoridis.* C. B. P. 470. Raii Hiſt. 2. 1489. *Radix Idæa putata, & Uva Urſi.* J. B. 1. 523. *Vaccinia Urſi, ſive Uva Urſi apud Cluſium.* Ger. 1230. Emac. 1416. SPANISH WHORTLES.

They grow in *Spain*, *Italy*, and other ſouthern Countries; and are ſaid, by *Dioſcorides*, to be good for exceſſive Fluxes of the Belly, Menſes, and all Kinds of Hæmorrhages. *Dale.*

UVÆ FARRILES, in *Cœlius Aurelianus*, imports Grapes dry'd in the Smoke of a Smith's Shop.

UVATIO. A Diſorder of the Eye, the ſame as *Staphyloma*. See OCULUS.

UVEA TUNICA. The uveous Coat of the Eye. See OCULUS.

UVIFERA ARBOR TABACENSIS. *De Laet.* The Name of a Tree, the Wood of which is red, the Leaves round,

and the Fruit like Grapes, of a very grateful Taſte. It grows principally on the Sea Coaſts. *Raii Hiſt. Plant.*

VULCANUS. Fire.

VULNERARIA. See ASTRINGENTIA.

VULNERARIA.

The Characters are;

The Calyx is tubulated, and ſwelling; the Pod is ſhort, full of a roundiſh Seed, and concealed in the membranaceous Calyx of the Flower.

Boerhaave mentions four Sorts of *Vulneraria*, which are;

1. Vulneraria ruſtica. See ANTHYLLIS LEGUMINOSA.
2. Vulneraria ruſtica flore albo. *T.* 391.
3. Vulneraria; flore purpuraſcente. *T.* 391. *Anthyllis, leguminoſa hirſuta herba, flore ſuave rubente.* M. H. 2. 181.
4. Vulneraria; pentaphyllos. *T.* 391. *Anthyllis leguminoſa, loto affinis, major, Hiſpanica veſicaria.* M. H. 2. 181. *Lotus pentaphyllos veſicaria.* C. B. 332. *Trifolium Halicacabum ſive veſicarium.* J. B. 2. 17. 361. *Boerh. Ind. alt. Plant.*

It is called *Vulneraria*, from its Excellence in vulnerary Uſes, for the Decoction of it, or the Herb itſelf, bruiſed and applied, deterges Wounds, prevents their Suppuration, and cloſes their Lips. *Hiſt. Plant. adſcript. Boerhaav.*

VULNUS. A Wound.

A Wound is a recent and bloody Solution of the Union of a ſoft Part, by a hard and ſharp Body in Motion, preſs'd againſt it, or reſiſting it.

In this Aphoriſm we have an accurate Definition of a Wound, which is, that it is a Solution of Coheſion in the Parts: But, in order to give it the Denomination of a Wound, it muſt be recent; by which Circumſtance it is diſtinguiſhed from an Ulcer, in which there is a Solution of Coheſion in Parts before cohering. By *Hippocrates*, however, as in *Lib. de Capit. Vulnerib. Cap.* 12. Ulcers and Wounds (ἕλκεα καὶ τρώματα) are ſometimes uſed promiſcuouſly, and that in the ſame Chapter. It is, alſo, added, in the Definition, that it is a bloody Solution of Continuity: For if the Wound is ſo ſmall that no red Blood is diſcharged, it hardly deſerves Conſideration, ſince the Skin can ſcarcely be pricked with the Point of a Pin, without producing an Effuſion of ſome Blood. It is, alſo, added, that it is a Solution of Continuity in a ſoft Part, in order to diſtinguiſh it from a Separation or Diviſion in the Bones, by Fracture or Fiſſure. And, laſtly, in order to diſtinguiſh it from a Contuſion, it is added, that the Solution of Continuity is made by an hard and ſharp Body, which, in a ſmall Surface, impreſſes its Motion on any Part of the Body: But an hard and ſharp Body cannot ſeparate the Coheſion of the Parts, unleſs, by Motion, or Preſſure, it is apply'd to the cohering Parts, or unleſs the Parts of the Body are moved or preſſed to the hard and ſharp, and at the ſame time reſiſting Body: For it is ſufficiently obvious, that the Effect muſt be the ſame, whether the Lancet is apply'd to the Arm, or the Arm to the Lancet.

Therefore the ſenſible Cauſe of a Wound is, the Hardneſs, Sharpneſs, and Motion, or Reſiſtance of the wounding Inſtrument.

Theſe Things are ſufficiently obvious: For, unleſs the wounding Inſtrument was hard, it could not overcome the Force by which the Parts mutually cohere; and unleſs it was ſharp, it would make a Contuſion, inſtead of a Wound.

The Subject is any ſoft Part; and therefore, conſequently, the Texture of the ſanguiferous, ſerous, lymphatic, adipoſe, nervous, membranous, and tendinous Veſſels, and the Canals formed of them.

It is obvious, from the Definition, that the Subject of a Wound is a ſoft Part; but modern Anatomy evinces, that the ſoft Parts of the human Body are a mere Congeries or Texture of Veſſels: Hence there can be no Wound without a Diviſion of many Veſſels, and that of different Series: For no ſanguiferous Artery can be divided, without the Veſſels almoſt of all Kinds, being injur'd; for the Coats of this Artery conſiſt of other ſmaller Veſſels, whoſe Coats are, alſo, made up of other ſtill ſmaller Veſſels, and ſo on, till we arrive at the ſmalleſt. Hence, by a ſimple Wound of a ſanguiferous Artery, the ſerous and lymphatic Veſſels are wounded, as, alſo, the Follicules which yield that lubricating Subſtance, with which the internal Sides of the larger Arteries appear anointed: The Membranes, alſo, and muſcular Fibres, conſtituting the muſcular Coat of the Artery, are wounded.

Hence it is obvious, that, by a very ſlight Wound, all the Parts, enumerated in this Aphoriſm, may be wounded.

In this Subject the Cauſe already mentioned, produces a Separation of the coherent Parts, and an Effuſion of the contain'd Liquid.

Since, therefore, there can be no Separation of Cohesion in a soft Part, without many Vessels being wounded, it is sufficiently obvious, that every Wound must produce a double Effect; for it separates the solid Parts before mutually cohering, and then it brings from the wounded Vessels that Fluid which was in them at the Moment they were wounded; as, also, that which by the Laws of Circulation, must soon be conveyed to the wounded Part through the divided Vessels. But since it is obvious, from the preceding Aphorism, that all Kinds of Vessels may be injured by a Wound; so it evidently appears, that all Kinds of Fluids may be discharged from the wounded Vessels.

Hence those Actions are injured, which depend upon the Cohesion of the Parts, and a determined Circulation of Liquids through the Vessels.

The entire human Body consists of Solids and Fluids. No Wound can be conceived, which does not destroy the Cohesion of the solid Parts, and interrupt the Circulation of the Humours through the divided Vessels: But all the Functions of the human Body depend on the Soundness of the solid Parts, and the due Motion of the Fluids through the Vessels. Hence there can be no Wound but what injures, at least, some Functions. Thus, that the Fingers of the Hand may be moved at Pleasure, the *Musculus Profundus*, and *Sublimis*, by which this Motion is performed, must be sound; now if by a Wound the Tendons of these Muscles are divided, the Motion depending on the Soundness of these Parts is of course destroyed.

In Physiology it is shewn, that, among other Things requisite to the Action of any Muscle, it is necessary there should be a free Influx of the Spirits through the Nerves: Now if the Nerve distributed to the Muscle should be divided, the usual Influx of the nervous Fluid into the Muscle is hindered, and its Action destroyed.

Those Wounds, therefore, are mortal, which are inflicted in those Parts whose Cohesion is inseparable from Life.

A mortal Wound is such as produces Death as its necessary Effect; but Death is present, when the Influx of the Blood into the Heart, and its Expulsion from it, are hindered: But that these two Effects may be produced, the Soundness of many other Parts is requisite. Every Wound, therefore, which destroys the Things requisite to the free Influx of the Blood into the Heart, and its Expulsion from it, must, of its own Nature, be mortal. The Characteristics of mortal Wounds, and in what Parts they are afflicted, shall be hereafter specified.

Some of these Wounds induce inevitable Death.

All those Wounds which by their Effects induce Death, agree in this, that they destroy the Reception of the Blood into the Heart, and its Expulsion thence: But there is, however, a considerable Difference between mortal Wounds; for some are inevitably mortal; so that though the Wounds are accurately understood, and the Parts wounded thoroughly known, no Attempts of Art hitherto known, can prevent Death from succeeding them, as the Effect does its Cause. Thus, for Instance, if by a two-edged Sword, thrust into a Man's Thorax, a large Wound is made in that Part of the Aorta where it emerges from the Pericardium, all the Blood discharged from the Left Ventricle of the Heart will flow through this Wound, and either be accumulated in the Cavity of the Thorax, or flow through the external Wound, but can never return through the Veins to the Right Ventricle of the Heart; whence inevitable Death ensues. Nor can this be by any Art prevented; for there is no Access to the Hand for applying Ligature, or Suture: And though this could be done, which, however, is impossible, the Aorta being ty'd, the Left Ventricle of the Heart could not empty itself. Hence the Circulation of the Blood, on which Life depends, would be suffocated.

But if after the Aorta is divided into two Branches distributed to each Thigh and Leg, it is wounded in any of these Branches, the Wound will, indeed, of itself, be mortal, because all the Blood will be discharged from this divided Artery; but yet it will not be inevitably mortal, because, by means of a Tourniquet, or Bandage, the Artery may be so compressed, as to emit no Blood, after which, it may be ty'd.

In the Reports given in by Physicians to Judges, these Circumstances ought carefully to be adverted to, and distinguish'd.

Others, if left to themselves, are mortal; but, by the Help of Art, may be so amended, as to remove the Danger of Death.

All the large Arteries distributed through the Limbs may, if wounded, discharge the Blood in such a manner, as to prove mortal: Hence a Wound in such an Artery is, indeed, mortal; but, by Art, may be hindered from producing Death, as its Consequence. Hence it is obvious, that Physicians and Surgeons, who treat Wounds, and make Reports concerning them to Judges, ought to know the Directions and Distributions of the larger Vessels, and those Parts in which they may be most commodiously compressed, in order to prevent Death from the subsequent Hæmorrhage.

Yet, through Neglect, or Error, Wounds, in themselves not mortal, may be rendered so.

This most frequently happens to those who least deserve it; that is, to Soldiers in the Field of Battle. Many wounded Men have died of Hæmorrhages, which might have been stopt by a skilful Surgeon. Many have, also, dy'd by an Extravasation of Blood under the Cranium, who might have been preserved by a seasonable Use of the Trepan. A strong Contusion of the external Integuments of the Cranium, accompanied with a very small Wound, has, when neglected, often produc'd the most terrible Symptoms, and even Death; all which might have been prevented, if a proper Method of Cure had been pursued. Numberless Instances of this occur in practical Authors.

Not only Neglect, but, also, Errors in Practice, often render Wounds, of themselves not mortal, fatal to the Patient. Persons rarely die of Hæmorrhages, unless the large Arteries are divided; but those who suffer a great Loss of Blood, fall into a Deliquium, and then the Hæmorrhage stops: If they are thus left half dead, as it were, in a moderately hot Place, give them only small Quantities of Fleth-broths, at different times; and by this means drooping Life may be supported, till the divided Vessel contracts itself, and is even often consolidated. Thus many have been preserved, whose Death seem'd unavoidable.

But those who endeavour to recover those who have fallen into Deliquiums, in consequence of violent Hæmorrhages by spirituous Liquors, do not restore the lost Quantity of Fluids, but increase the Action of the Vessels upon the Liquids; by which means another Loss of Blood is produced, and the Cause of Death augmented. Many, after Engagements, being left for whole Days among the Carcases of the Slain, with almost their whole Blood exhausted, have, however, afterwards revived.

Some Chymists inform us, that Arsenic, fixed with Nitre, is an excellent Remedy for stopping Hæmorrhages; but the Application of such a virulent and poisonous Remedy to a crude Wound, is highly dangerous; since the smallest Portion of it, received into the Veins, after violent Convulsions, might prove mortal.

Hence when, by public Authority, the Carcases of wounded Persons are inspected, it ought first to be enquired whether the Wound is such as that Death must necessarily ensue; or whether by Surgery, as now known, Death might have been prevented; and then, whether the Death, succeeding the Wound, is to be ascribed to that Wound, or to other Causes.

The Effects of Wounds are various according to the Variety of Actions exercised, whilst the wounded Part was entire; and hence various Appellations of Wounds arise, which are readily distinguished by the Physician who is acquainted with those Actions during Health.

As many different Parts of the human Body as may be hurt by a Wound, so many distinct Functions may be injured, the Soundness of which depended on the Cohesion of the Parts divided by the Wound: But the Person who, from the high Improvements of Anatomy and Physiology, knows the various Uses of the several Parts of the Body, can, from a Knowledge of the Part wounded, determine the Injury which must succeed the Wound. Thus, when the Tendon of a Muscle is divided, it is obvious, that the Action of such a Muscle which depended on the Soundness of the Tendon, must be destroyed: Hence it is obvious, that there is a great Variety of Wounds, as to the Effects they produce in different Parts of the Body.

Nor is there a less Variety of Names, Forms, and Effects, in Wounds arising from the Diversity of the wounding Cause, with respect to its Figure, and Method of acting, whether by Puncture, Cutting, Striking, or Agitation; as, also, with respect to the Force with which it is applied, its Removal from the Wound, its remaining in it, and its poisonous Infection.

In this Aphorism are considered the Diversities of Wounds, so far as they depend on the wounding Instrument.

As for the Figure; if the Instrument be of a conical acute Figure, there will be a Puncture, which soon closes; in which Case,

Caſe, it is difficult to know the Deepneſs of the Wound: But if the Inſtrument is of the Figure of an acute Wedge, a Sciſſure will be produced.

As for its Method of acting, whether by Puncture, or Cutting; from theſe Circumſtances ariſe a great Variety of Wounds; for, by Puncture, a narrow, though often a deeply-penetrating Wound, is produced: Whereas, when an Inſtrument, of the Form of an acute Wedge, is drawn through the ſoft Parts, then long tho' leſs deep Wounds are form'd.

As for Striking; in this Caſe the wounding Inſtrument penetrates with the greater Force, and is driven the deeper; and, unleſs it is very ſharp, it may, at the ſame time, make a Contuſion.

As for Agitation; it is to be obſerved, that, when a Wound is inflicted with a full-extended Arm, the Sword often paſſes without doing any great Harm between Parts a Wound in which would be very dangerous; but if the Sword, remaining in the Wound, is agitated and twiſted about in it, far more Parts are injur'd; but this is to be learned from the Figure of the Wound: For if the Bulk of the Wound correſponds to that of the wounding Inſtrument, it has only been inflicted with a direct Thruſt: But if, with a broad Sword, the Wound is made round, it is a Sign, that the Sword has been twiſted about in it.

As for the Force of impinging, according to the different Degrees of Impetuoſity with which the wounding Inſtrument is apply'd to the Body, the Wound will penetrate more or leſs deep.

As for removing the Inſtrument from the Wound, or leaving it in it; in the moſt violent Wounds it is ſometimes expedient to leave the Inſtrument in the Wound, ſince the Parts wounded often ſo embrace the Inſtrument, as to prevent an Hæmorrhage, which, when the Inſtrument is withdrawn, often proves inſtantly mortal. By this means, Life is at leaſt preſerved for ſome time. Thus *Virgil*, in his *Æneid*, *Lib.* 10. when repreſenting the Death of *Pallas* by *Turnus*, expreſſes himſelf in the following beautiful manner:

Ille rapit calidum fruſtra de vulnere telum,
Una eademque via ſanguiſque animuſque ſequuntur.

When the implacable *Achilles* is, in the 22d Book of *Homer*'s *Iliad*, repreſented as having plunged a Spear in the Neck of *Hector*, he is ſaid to leave the Inſtrument in the Wound, that he might have an Opportunity of inſulting him in the Agonies of Death; but *Hector* expired as ſoon as the Spear was withdrawn.

This Diverſity of Wounds principally happens from this Cauſe; when the Inſtrument is barb'd, or hook'd, ſo that it cannot be extracted without great Laceration.

As for the poiſonous Infection; ſurpriſing Experiments evince, that there are ſome Subſtances, which, tho' they may be ſafely ſwallowed, yet prove infallibly and ſuddenly mortal, when apply'd to Wounds. In the Bites of Vipers, the venomous Juice, convey'd into the Wound by the Teeth of the Animal, infallibly kills Men, larger Animals, Hens, and Pigeons. When, at the Deſire of the great Duke of *Tuſcany*, Men of Learning were inquiring into the Nature of the Venom of the Viper, and with the Antients and ſome of the Moderns, aſſerted that it was lodged in the Bile of the Animal, a bold Viper-catcher convinced them of their Miſtake; for he courageouſly drank the Bile, mix'd with half a Glaſs of cold Water, and ſuſtain'd no Injury by doing ſo: Nor did the Viper's Gall, exhibited to various Species of Animals, do them any Harm; nor, when dropt into a recent Wound, did it produce any bad Effects. *Franc. Redi Obſervat. de Viperis.*

Others think it more probable, that the Poiſon of Vipers is lodg'd in the *Loculi*, or Bags, adjacent to their Teeth; in which there is a Liquor, in Colour and Taſte reſembling Oil of Almonds; and, when the Viper bites, the Jaws being compreſſed, this Liquor is neceſſarily infuſed into the Wound. But tho' the Poiſon, convey'd into the Wound by the Viper's Bite, produced ſuch terrible Effects, the ſame Viper-catcher who drank the Bile, did not heſitate to drink the Liquor expreſſed from the *Loculi* of an angry Viper, and all the Foam and Saliva in its Mouth, after having diluted them in Wine, without ſuſtaining any Injury. Neither did this Liquor and Foam produce any bad Effects, when exhibited to other Animals. *Redi.*

The Spears of the Inhabitants of *Bantam*, which, by a very ſlight Wound, prove mortal, when infuſed in Wine, or any other Liquor, for many Days, conveyed no malignant or poiſonous Quality to the Liquor in which they had ſo long remained. *Redi.*

When the vallant *Cato* led his Army thro' the parched *Libyan* Deſerts, his thirſty Soldiers would not venture to drink of a certain Fountain, on account of the great Number of Serpents it contain'd; but their ſagacious General perſuaded them to drink boldly, and encouraged them, by his own Example, to do ſo. *Lucan. Pharſal. Lib.* 9.

If a Thread, wet with Oil of Tobacco, is, by means of a Needle, paſſed thro' any Part of a live Animal, ſuch an Animal ſoon dies. In this manner was a Viper killed, in leſs than half a quarter of an Hour, by *Redi*; who, nevertheleſs, found, that the ſame Degrees of Malignity were not in the Oils obtained from all the Species of Tobacco.

When, therefore, there are anomalous Symptoms, which we cannot ſuſpect to ariſe from the Wound, as their Cauſe, we are then to conſider whether they ariſe from the venomous Infection of the wounding Inſtrument.

All theſe again vary, with reſpect to the Difference of the Part receiving the Wound, as to its Hardneſs, Softneſs, Connexion, Situation, Effect, contain'd Liquid, and Alteration.

In the two preceding Aphoriſms are enumerated the Diverſities of Wounds, as far as they depend on the Functions injur'd by the Wound; as, alſo, thoſe Differences which depend on the Diverſity of the wounding Cauſe: But in this are conſidered thoſe Varieties of Wounds which ariſe from the different Natures of the wounded Parts.

As for the Hardneſs or Softneſs of the Part; a wounding Inſtrument will, with a ſmall Force, penetrate the ſoft Integuments of the Abdomen; but it will require a far ſtronger Impetus, or Application, to divide the Cranium.

As for the Connexion of the wounded Part with others; when the Tendon of a Muſcle is divided, the Motion of that Part to which it was naturally united, is loſt; and this is accounted the Effect of the Wound. When a ſmall Artery, remaining in the Socket after the Extirpation of a Tooth, diſcharges ſo much Blood as almoſt to prove mortal, this does not happen becauſe ſo ſmall an arterial Ramification is hurt, but becauſe, being fix'd to the bony Surface of the Socket, it cannot contract itſelf, and by that means be cloſed. When, in the Flexure of the Cubit, by raſh and unſkilful Veneſection, the *Aponeuroſis* ariſing from the tendinous Part of the Biceps Muſcle is hurt, the terrible Symptoms which enſue do not depend upon ſuch a ſlight Wound, but upon the Connexion of that tendinous Expanſion with other Parts.

As for the Situation of the Part; if only a ſmall Ramification of the intercoſtal Arteries is ſo wounded, that the *Pleura* being, at the ſame time, perforated, the Blood flows into the Cavity of the Breaſt, the Lungs may, by the Corruption of the extravaſated Blood, be inflamed and ſuppurated, and a mortal Conſumption brought on, only becauſe that Artery is ſo ſituated as that it can diſcharge Blood into the Cavity of the Breaſt. For, in other Parts of the Body, larger arterial Ramifications may be cut without Danger. A Wound in the internal Part of the Thigh is, on account of the large Veſſels ſituated there, far more dangerous than an equal Wound in its external Part.

As for the Effect; many Parts of the human Body are of ſuch a Nature, that, when they are injured by a Wound, or any other Cauſe, the Functions of other Parts are, alſo, diſturbed; but Anatomiſts have not as yet found a Reaſon why, when the former are hurt, the Actions of the latter ſhould be diſorder'd. Thus, for Inſtance, after ſeveral Fits of the Colic, or Iliac Paſſion, there ariſes, in the *Colica Pictonum*, a Palſy of the Arms, and frequently, if the Diſorder proceeds, a true *Maraſmus* of the ſuperior Limbs. But no one, from the known Structure of the Parts, can account for ſuch a Phenomenon. In the *Memoires de l'Acad. des Sciences*, *l'An.* 1727. we are inform'd, that, after Wounds of the Abdomen, in which ſome Nerves of the Meſentery were cut, the Patient was ſubjected to intolerable Pains, and died; but, upon opening the Body, neither the large Veſſels were found cut, nor any of the Viſcera wounded: Upon cutting in a Dog the intercoſtal Nerve, and the eighth Pair, which, in that Animal, are included in one Vagina, or Covering, it appeared, that the Dog's Eye, on the ſame Side, was darkened, became leſs, and was inflamed; and, by repeated Experiments, it was evinced, that the Eyes are always ſenſibly changed, by that means. But this could not be accounted for from the Structure of the Parts, tho' it was confirmed by the Effects ſucceeding the Wound. Hence it is obvious, that there is a great Diverſity of Wounds ariſing from the Effects which are obſerv'd to be produc'd by the wounded Part in other Parts of the Body. But an Obſervation of the Fact often informs us of ſuch Events, when, from the known Structure of the Parts, we could not have demonſtrated, that ſuch Phenomena were to be apprehended.

As for the Liquids contained in the Part wounded; if the Gall-bladder, being wounded, diſcharges the Bile into the Cavity of the Abdomen, this Bile, becoming putrid, will ſoon

produce terrible Symptoms. If the Ureters ſhould be cut, the Urine diſcharged from the Wound, will be accumulated in the Abdomen, and becoming corrupted may render all the abdominal Viſcera putrid.

As for a Change or Alteration in the Appearance of the Parts; the Parts of the Body hurt by a Wound may, more or leſs, ſo degenerate from their natural Conformation, and by that means have their external Appearance ſurpriſingly chang'd.

When the Muſcles of one of the Sides of the Face become paralytic, there is a ſurpriſing Diſtortion on the oppoſite Side; becauſe the Muſcles, deſtitute of the Æquilibrium of their antagoniſt Muſcles, retract the Parts of the Face. It is ſufficiently obvious, that the like Effect may be produced by Wounds, when ſome Muſcles of the Face, or other Parts, are hurt; or when the Nerves diſtributed to theſe Muſcles are cut or divided.

As it is neceſſary to be acquainted with the Origin of this Multiplicity, ſo a ſubtile Diſtinction of Names is of no great Uſe.

It is not to be doubted, but Phyſicians and Surgeons, who undertake the Cure of Wounds, ought carefully to attend to what has been ſaid in the three preceding Aphoriſms; for upon theſe depend the Diagnoſtics and Prognoſtics of Wounds, which can be placed on no ſure Foundation but that of a Knowledge of the Structure and Uſe of the Parts: For when we know the wounding Inſtrument, together with the Manner and Force with which it was applied, when we conſider the Nature of the Part wounded, and know its natural Uſes injured by the Wound, we foreſee what is to be dreaded, and underſtand how far Art can remove the Misfortunes which have already happened, or prevent ſuch as are to be expected. But it ſeems difficult by various Names ſo to ſpecify the numerous Diverſities of Wounds, that the Word affixed to each ſhall convey a diſtinct Idea of it to the Mind; and ſtill more difficult ſo to impreſs theſe Ideas and Words in the Memory, as that they may be of Uſe. Thus *Paré*, that he might give the Differences of Wounds, has prefixed a whole Table to his Treatiſe on Wounds: But a Perſon who attentively conſiders, will eaſily ſee that theſe are not of great Uſe; and that the general Knowledge of thoſe Things on which the ſo great Diverſity of Wounds depends, is ſufficient.

If, in an healthy and robuſt Body, a Wound is made in a viſible Place, not irrigated by any large Artery, and not too tendinous, the following Phenomena ariſe, provided the Orifice of the Wound is defended from the Cold, from Air, and Exſiccation.

That ſomething certain may be eſtabliſhed, with reſpect to the Cure of Wounds, it is neceſſary to premiſe thoſe Phenomena, which are obſerved to happen from the time in which the Wound was inflicted, till it is perfectly conſolidated; and, when theſe are pointed out, in the Order in which they ſucceed each other, they afford an evident Knowledge of the Method uſed by Nature in reſtoring Parts ſeparated by a Wound, to their former Coheſion.

In order, therefore, to avoid all Error and Confuſion, we ſhall only here conſider a Wound alone, and ſuppoſe the Body of the wounded Perſon in perfect Health in every other reſpect; otherwiſe the Phenomena obſerved would not be juſtly aſcribed to the Wound alone, but might, in ſome meaſure, depend upon a Diſeaſe accompanying the Wound; for quite other Changes appear in a Wound when the Body of the Patient labours under a ſcorbutic, venereal, or rachitic Cacochymy: Beſides, the Body is ſuppoſed robuſt; for in weak Habits the languid Circulation conveys the Humours to the Wound with a ſmaller Impetus: Hence, in ſuch a Patient, the Pain, Heat, and Tenſion, are far leſs about the Lips of the Wound, than they are in an equal Wound inflicted on a ſtrong, robuſt, and vigorous Perſon.

Beſides, all theſe Things ought to be obvious to the Senſes: Hence, in the external Parts of the Body, the Phenomena of Wounds are principally obſervable; and from a Sight of theſe we learn what happens in the internal Parts of the Body, when wounded. For this Reaſon it is, alſo, ſuppoſed, that no large arterial Veſſel is wounded; for in this Caſe, the violent Effuſion of Blood would hinder all the Phenomena from being accurately viewed.

It is, alſo, added, that a Wound ought not to be in a tendinous Place; for if the Tendon of any Muſcle is wounded, and not entirely cut thro', the Muſcle affixed to ſuch a Tendon may, by drawing the wounded Tendon, produce terrible Symptoms, which do not ſo much depend on the Wound, as on the Muſcle drawing the wounded Tendon. But we ſhall hereafter deſcribe thoſe Symptoms which ariſe from a Diviſion of large Arteries or Tendons by means of a Wound.

Beſides, an Admiſſion of the Air, eſpecially when Cold, ſurpriſingly changes the wounded Parts, and injures and dries the tender Veſſels. Thus if, by a Wound, the *Cranium* is denudated, and the Bone expoſed to the free Air for a conſiderable time, ſuch a Wound will hardly be cured till there is a Separation of the bony *Lamina*, by Exfoliation. But this Circumſtance does not depend upon the Wound: For if the denudated Bone had been immediately defended from the Air, ſuch an Exfoliation would not have happened.

Under theſe Conditions, then, are enumerated, the Phenomena proper to Wounds alone, in the following Numbers:

1. The Parts between which the wounding Cauſe is forced, recede by degrees more and more from each other, tho' the Cauſe is removed, unleſs the Puncture is very ſmall.

As ſoon as the wounding Inſtrument has divided the Coheſion of the Parts, the Diſtance of the Parts ſeparated is equal to the Thickneſs of the Inſtrument: Hence, when the public Executioner, with a ſharp Razor, ſlits the Face of Malefactors, there only appears, at firſt, a red Line; but, gradually, the Lips of the Wound recede from each other, ſo as frequently, in a few Hours, to be the Breadth of a geometrical Line diſtant from each other: For that Force by which the ſolid Parts cohere, proceeding to act, retracts the divided Lips; becauſe in the Place where the Wound is, the Coheſion of the Parts is deſtroyed.

As for the Smalneſs of the Puncture; whilſt a wounding Inſtrument by Puncture makes a ſmall Wound, as ſoon as it has penetrated the Skin, and wounded the ſubjacent *Tunica Celluloſa*, unleſs the Patient's Body is much extenuated, the Wound appears very inconſiderable, or none at all; becauſe the *Tunica Celluloſa*, by the Preſſure of the Skin, in the adjacent Parts, immediately riſes in the Wound, and cloſes it. Hence, when corpulent Perſons are blooded, the Diſcharge of the Blood is often ſuddenly ſtopt by the Fat obſtructing the Orifice of the Skin.

2. At firſt the Blood flows from a Wound with Impetuoſity, but, by degrees, ſtops ſpontaneouſly.

If a great Artery is not wounded, nor ſuch a one as, being affixed to a Bone, cannot retract, and cloſe itſelf, the firſt Moment the Wound is received, the divided Veſſels diſcharge the Blood with Impetuoſity; but ſoon after, their Orifices being by their own Elaſticity contracted, and concealed within the Lips of the Wound, the Hæmorrhage is quickly diminiſh'd, and at laſt ceaſes ſpontaneouſly. This evidently appears in Cutting for the Stone; in which Operation, when by a pretty large Wound the Skin and ſubjacent Parts are divided, an Ounce or two of Blood are diſcharged; but unleſs, by ſome unlucky Accident, a large Artery is wounded, the Hæmorrhage, which would otherwiſe greatly diſturb the Operation, ſoon after ceaſes almoſt totally; for almoſt all the Blood evacuated from the Wound is diſcharged from the Arteries; for pretty large Veins, when divided, diſcharge but a ſmall Quantity of Blood, unleſs there is ſome Obſtacle placed between the Heart and the Wound, inflicted in the Vein: But the Arteries, by their Elaſticity, eaſily contract themſelves; by which means, the Blood is ſoon ſtopt.

3. Then a ſanguineous Cruſt is formed in the Cavity of the Wound.

Since, then, as we have now obſerved, arterial Blood is almoſt only diſcharged from a Wound; and ſince ſuch Blood, when extravaſated, in the ſoundeſt and moſt robuſt Perſon, is naturally ſoon coagulated; hence, as ſoon as the Impetus of the diſcharged Blood begins to ceaſe, ſuch a *Coagulum* of the Blood is formed, generally called a *Thrombus*, or bloody Eſchar, which adhering to the Lips of the Wound, perfectly covers its whole Surface. Thus Wounds are covered and defended by the exquiſite and ſalutary Effort of Nature; and under this Covering, the Parts ſeparated by the Wound are gradually conſolidated: And becauſe this *Thrombus* is, by the Heat of the Body, and the contiguous Air, more and more dried, there is a pretty hard Covering thus formed, which after the Cure of the Wound ſpontaneouſly falls off.

4. A diluted rediſh thin Liquor flows from it.

When this *Thrombus* begins to be formed, or when it is removed, after its Formation, Blood is not generally diſcharged, but only a thin Liquor tinged with a faint-red Colour, and reſembling the Waſhings of new-killed Fleſh. This ſeems to happen

happen because the Veſſels deſtined for the Conveyance of the red Blood being divided, but gradually contracting, their Orifices diſcharge but little red Blood, whilſt a greater Quantity of a thinner Fluid, which is not red, is evacuated from them.

5. Then the Lips of the Wound begin to be red, preternaturally hot, painful, tumid, and retorted, whilſt the Bottom of the Wound becomes tumid and prominent. But eſpecially the Fat riſes into the Aperture of the Wound, and there ſoon degenerates.

When the divided Veſſels by their proper Elaſticity contract their Orifices, and are almoſt entirely cloſed, the Humours which uſed to flow through thoſe Veſſels, are ſtopt: Hence there ariſes an Obſtruction about the Lips of the Wound, and the Impetus of the ſucceeding vital Humours forcing the Fluids into the obſtructed Veſſels, dilates them near the obſtructed Place; and hence ariſes a true Inflammation. For this Reaſon on the ſecond and third Day the Lips of the Wound become red, whilſt greater Heat and Tumor, the Concomitants of an Inflammation, appear. And if all theſe Symptoms are moderate, they prognoſticate nothing bad, ſince they naturally happen in all Wounds. This is the Reaſon why a recent Wound is hardly accompanied with any Pain, but eſpecially on the third Day, or ſometimes ſooner, an Inflammation ariſing, and the wounded Parts becoming tumid, a very conſiderable Pain is often perceived in the Wound.

Hence *Hippocrates*, in *Epidem. Lib.* 2. tells us, "That "when ſevere Wounds are inflicted, if a Tumor does not "ſucceed, it is a very bad Sign." The ſame is affirmed in *Aph.* 66. and 67. *Sect.* 5. where he obſerves, "That ſoft "Tumors are good, but ſuch as are crude, bad." For if no Tumor ariſes about the Lips of the Wound, it denotes that the vital Force is defective, and if the Tumor is exceſſive, the violent Inflammation lays a Foundation for dreading a bad Event.

The ſame Author, in his Treatiſe *de Fracturis*, not only obſerves, but lays it down as one of the moſt important Rules in Surgery, "That on the third and fourth Days, Wounds "are by no means to be diſturbed; and that we are at this "time to abſtain from all Searches by the Probe, and from "every thing which is capable of irritating Wounds; for in "general, moſt Wounds take a conſiderable Turn, and grow "troubleſome on the third or fourth Day."

For the like Reaſon, in the ſame Treatiſe, he adviſes, that when a fractured Bone ſticks through the Skin, it is to be reduced on the ſame or following Day; but not on the third, and by no means on the fourth and fifth.

Thus *Simeon*, and *Levi*, the crafty Sons of *Jacob*, in order to revenge the Affront given them by *Sechem* the Son of *Hamor*, in deflowering their Siſter *Dinah*, perſuaded the the unwary *Hamorites* to ſubmit to Circumciſion; and on the third Day, their Wounds being ſo exceſſively painful, that they could make no Reſiſtance, they ſlew them all both with Eaſe and Impunity.

As for the Retorſion of the Lips of the Wound, and the tumid prominent State of its Bottom: The Membrana Adipoſa ſubjacent to the Skin is eaſily diſtended, and rendered tumid, as is obvious in fat and dropſical Perſons, and in an Emphyſema, in which the Air entering the Membrana Adipoſa, produces ſo ſurpriſing Expanſions thereof. But the Skin covering the Membrana Adipoſa, confines it very ſtrongly; hence, when the Skin is divided by a Wound, the Lips of this Wound gradually recede from each other; and the Membrana Adipoſa, which in the Place of the Wound is free from the equable Preſſure of the Skin, ſoon riſes and ſwells. Hence the Skin being on both Sides retracted from the protuberant Membrana Adidoſa, the Lips of the Wound are retorted, and, in its Bottom, a tumid Prominence appears. But if the Impetus of the Fluids diſtending the Veſſels remains the ſame, whilſt the Cauſes reſiſting this Diſtenſion are leſſened, the Largeneſs of the Veſſels will be augmented. When, therefore, the Reſiſtance of the Skin in a Wound is removed, the Membrana Adipoſa riſing in the Wound, will be more dilated, and grow out into what the Surgeons call *fungous Fleſh*, and conſequently degenerate very ſoon.

6. And, at the ſame time, a ſlight Fever, accompanied with Thirſt and Heat, is excited.

This only happens when the Wound is conſiderably large; for in a ſmall Wound theſe Symptoms are not generally obſerved; for as ſoon as the Symptoms enumerated in the preceding Number ariſe, a greater Heat is excited, not only in the Wound, but, alſo, in the whole Body, the Pulſe becomes quicker, the Patient is afflicted with Inquietudes, and turbulent Dreams; his Thirſt is, alſo, increaſed, and his Urine more red than before. But all theſe Symptoms laſt as long as the Tumor, Pain, Heat, and Retortion of the Lips of the Wound are preſent; and when theſe ceaſe, the other terminate. Such a ſlight Fever happening to wounded Perſons in this Stage of their Misfortune, is ſo far from being injurious, that it is beneficial, ſince by its means the Pus is formed, after which it generally ceaſes. In cutting for the Stone, the Extirpation of a Breaſt, or other Wounds of a like Nature, the Preſence of ſuch a Fever at the time ſpecified, is always a good Sign.

Hence *Hippocrates*, in *Aph.* 47. *Sect.* 2. obſerves, "that "during the Generation of Pus, Pains, and Fevers more "readily happen, than when it is formed."

But here we only ſpeak of ſuch a Fever as at this time ariſes from the Wound as its Cauſe; for a Fever may happen to wounded Perſons from various other Cauſes: Thus in large Wounds a copious Pus already formed, and in ſome meaſure reſorb'd by the bibulous Veins, often induces an hectic Fever, which preys upon the Body.

7. Hence about the third or fourth Day, ſooner or later, a tenacious, white, pinguious, equal Liquor, called *Pus*, is formed in the Wound.

When a Wound is inflicted, the Blood is immediately diſcharged; and afterwards, when the divided Veſſels are more conſtricted, a rediſh Ichor. Then ariſes an Inflammation of the Wound with the Symptoms deſcribed. Then begins to appear in the Wound an unctuous Liquor, almoſt of the Conſiſtence of freſh Cream, ſomewhat yellowiſh, entirely equable, without Smell, and of a mild Taſte, almoſt like that of Chyle: This Liquor is called *Pus*, which if laudable, has all the now enumerated Qualifications. But ſuch a Pus is never formed unleſs the Wound is covered; but a Pus of this Kind is generated under a Thrombus ariſing in the Wound, or a Plaiſter covering it. Hence Pus is not formed in the Veſſels, but in the Wound, by the extravaſated Humours cheriſhed and changed by the Heat of the Body; for if all the Pus in a Wound is wiped away with ſoft Lint, about an Hour after the Surface of the Wound will every-where appear moiſt with a thin Liquor, which is not Pus. But if for twenty-four Hours the Wound is covered with a Plaiſter, the Pus will appear upon removing this Plaiſter. Hence Pus is formed out of the Veſſels; but the Matter of which it is formed, is conveyed thro' the Veſſels.

But Pus thus formed in a Wound produces happy Effects; for Nature uſes this Method to diſengage and ſeparate from the live and ſound Parts ſuch as are mangled and half lacerated, and the inflamed Extremities of the Veſſels, together with the infarcted Liquids lodged in the Lips and Bottom of the Wound. Beſides under this Pus, when formed, all the loſt Parts grow up afreſh.

Hippocrates, who ſtrictly followed Nature, in the Beginning of his Treatiſe *de Ulceribus*, tells us, that recent Wounds [ἕλκια νεότρωτα, which Words ſeem rather applicable to Wounds than Ulcers] and the Parts adjacent to them were not inflamed, if a Suppuration was ſpeedily brought on. He afterwards adds, that a Wound inflicted with an acute Inſtrument, may be cured without a Suppuration; but that contuſed and mangled Fleſh became putrid, and being converted into Pus, was conſumed, after which new Fleſh muſt neceſſarily be generated.

In the ſame Place he tells us, that Wounds are inflamed when they tend to a Suppuration; but they ſuppurate by ſuch a Change and Heat of the Blood, as renders their Pus putrid. But by Putrefaction, he does not here ſeem to mean a malignant and truly putrid Degeneracy of the Humours, but only that Change of their State by which they are transformed into Pus, as is obvious to every one who reads the Paſſage attentively.

Hence laudable Pus is by Surgeons reckoned the beſt of Signs. And *Galen*, in *Com. Aph.* 22. *Sect.* 5. does not heſitate to affirm, "that no bad Accident can happen to an Ulcer "which generates Pus;" for Pus is formed whilſt laudable Humours are with a due Motion conveyed to the Wound; hence it has as its firſt Cauſe, the Actions of remaining Health; for in a cacochymic Body good Pus is rarely formed in a Wound, but an Ichor, which greatly degenerates from the Conditions of laudable Pus. Hence in ſuch Patients, Wounds though ſlight, are not to be cured without the greateſt Difficulty. For this Reaſon the antient *Greek* Phyſicians called ſuch Bodies δυσπαθῆ, that is, Bodies in which Wounds were not cured without great Difficulty. And *Hippocrates*, in *Aph.* 8. *Sect.* 6. tells us, "that Ulcers ariſing in the Bodies of dropſical Patients are "not eaſily cured." If, in conſequence of a violent Fever, the Humours are moved with a great Impetus, the Wound appears dry without any Pus: If, on the contrary, the Action of

of Nature is languid, there is, alſo, a Defect of Pus. For this Reaſon *Hippocrates*, in *Prognoſt.* reckons the Dryneſs of an Ulcer among the Signs of approaching Death.

8. At this time the Redneſs, Heat, Tumor, Pain, Retorſion of the Lips, and Fever, ceaſe, or are diminiſhed.

For all theſe Symptoms only ariſe, becauſe the divided Veſſels in the Lips of the Wound being contracted by their Elaſticity, deny a free Paſſage to the Fluids convey'd to them. Hence ariſes a true Inflammation which brings on Redneſs, Pain, and Heat in the Part. The Membrana Adipoſa in the mean time, free from the equable Preſſure of the Skin, receives into its dilated Veſſels foreign Humours, by which means it becomes tumid in the Bottom of the Wound, and retorts its Lips. But a Suppuration ſeparates the obſtructed Extremities of the Veſſels, together with the ſtagnant Fluids lodged there. Hence, when Pus is formed, and the obſtructed Veſſels are again rendered pervious, a free Circulation of the Humours thro' them is reſtored. All theſe Symptoms, therefore, ariſing from an Inflammation of the Lips and Bottom of the Wound, are neceſſarily much diminiſhed, or totally removed, by the Formation of Pus.

This Stage of a Wound is by Surgeons generally called the *Time of Digeſtion*; and when they ſee the tumid Parts ſubſide, they generally ſay, that *the Pus ſuſes, and diſſolves all the Parts.*

9. And the Cavity of the Wound, from the Bottom to the Top, from the Circumference to the Centre, is gradually filled with a new red live Matter called *Fleſh*, whilſt the Margins, becoming white, bluiſh, ſoft, and equal, are united.

When after a laudable Digeſtion, all the Parts which could not be reduced to their requiſite Soundneſs, are ſeparated from the live Veſſels, then the Wound is ſaid to be *pure*; and its whole Surface appears every-where equably moiſt and perſpirable, whilſt there is no Roughneſs nor Dryneſs either in the Lips or Bottom of the Wound. Then begins that Stage of the Wound in which it is conſolidated; for under the Pus, which is a natural and mild Balſam, we daily obſerve the Bottom of the Wound to riſe gradually, and a new Matter to proceed equably from the Circumference to the Centre. And when this Matter is viewed with Microſcopes, it appears to be the tender and pulpous Extremities of Veſſels. This is by Surgeons called *Incarnation*; not that muſcular Fleſh properly ſo called, is regenerated in this manner, but it has become cuſtomary to call this red and live Matter daily increaſed in a pure Wound, *Fleſh*. This appears beautifully in Wounds with Loſs of Subſtance, whilſt, for Inſtance, by the Stroke of a Sword, the Skin, with a Part of the ſubjacent Membrana Adipoſa, is carried off; for in this Caſe there naturally appears, firſt, in the Bottom of the Wound, a Congeries of ſprouting Veſſels; then the like Veſſels are protruded from the Margins, and concurring and uniting with the others riſing from the Bottom, by an admirable Artifice of Nature, reſtore the loſt Subſtance; for in this Caſe, Art does nothing but remove Impediments, and prevent the Acceſs of the Air, by covering the Wound; the natural Fabric of the Body performs all the reſt. That theſe things happen in this manner is ſufficiently certain; but by what Laws or Mechaniſm they are brought about, is hitherto unknown. *Galen*, in *Method. Medend. Lib.* 3. *Cap.* 3. beautifully expreſſes this in the following manner: "With reſpect to the "Generation of Fleſh, it is to be obſerved, that the Matter "of it is laudable Blood; but the Artiſt, or Author, of its "Formation, [ὑφηγὸς τε καὶ τεχνίτης] Nature." In this Paſſage he treats of the Method in which an hollow Ulcer ought to be cured. The Antients were, however, ignorant of the admirable Structure of the minute Veſſels of which our Bodies are compoſed. And the Moderns far more ſkilled in Anatomy, cannot help admiring how the elongated Mouths of the divided Veſſels in the Wound, ſhould concur, unite, and be concreted with the adjacent Veſſels, and that in ſuch a manner, that Arteries are united to Arteries, Veins to Veins, and Nerves to Nerves; ſo that a Subſtance exactly like that which was loſt, is formed in the Wound. This peculiar Property of the human Body is loudly expreſſive of the infinite Wiſdom of its all-powerful CREATOR.

Whilſt theſe thing happen in an hollow Wound, the Margins which were before red and tumid, begin to ſubſide in an equable manner; they acquire a bluiſh Pearl-like Colour; and thus the firſt Rudiments of the Cicatrix are formed about the Margins, and are gradually increaſed toward the Centre, till the Wound is equably cloſed.

10. Laſtly, the Wound becomes dry, and is covered with a Cicatrix.

When all the loſt Parts are reſtored, and the Parts divided by the Wound, united, the Wound appears dry, though before a certain Moiſture was obſerved all over its Surface.

If a large Quantity of Subſtance is not loſt, nor by an exceſſive Suppuration much of the Membrana Adipoſa and Skin conſumed, all the Parts are ſo conſolidated, that there hardly appears any Difference between the Place of the Wound, and the adjacent Skin, in which Caſe it hardly deſerves the Name of a Cicatrix. But where a large Portion of the Skin is taken away, or much of the ſubjacent Membrana Adipoſa conſumed by the Suppuration, then the Place of the Wound will appear more white, ſolid, and often more depreſſed, than the adjacent Skin. In this Caſe it is called a *Cicatrix*, which is always leſs perſpirable, tho' more ſmooth and ſhining, than the other Parts of the Surface of the Body. This is in a particular manner obvious after the Extirpation of a Breaſt or large Steatoma, where a conſiderable Portion of the Skin is removed; for in this Caſe the Cicatrix formed, or Surface of the Wound is ſmooth, ſhining, unmoveable, and adhering to the ſubjacent Parts.

Thus we have deſcribed the Hiſtory of Wounds in a ſound Body, and enumerated all the Phenomena, which from Experience we find to happen in a Wound from its firſt Infliction to its entire Conſolidation. Hence we may deduce the beſt Method in which Wounds ought to be cured, which is, by imitating Nature's Method, which conſiſts in removing ſuch things as are hurtful, and ſupplying ſuch as are defective. But it is to be obſerved, that we here ſpeak of Wounds in which neither a large Artery, nor an highly tendinous Part, are wounded. We muſt, therefore, next conſider, what Changes of Phænomena happen to a ſimple Wound, if ſuch Parts ſhould be wounded.

If an Artery, not too large, nor too near the Heart, is cut quite through tranſverſly, the divided Parts retiring, and hiding themſelves in the neighbouring ſolid Parts, by means of this Contraction, ſtop the Efflux of Blood; and the other Phenomena proceed as before deſcribed.

Whilſt the Blood, by the Force of the Heart, is thrown into the Arteries which always become narrower, by acting on their Sides it removes them from the Axis of the Canal, and conſequently increaſes the Capacity of the Arteries. But all other Circumſtances being alike, it dilates the Arteries the more the greater Reſiſtence there is about their Extremities. Hence an Artery when tied becomes very tumid between the Ligature and the Heart. But this Dilatation is reſiſted by the muſcular and orbicular Fibres of the Arteries with a conſiderable Force, by which they are again contracted into their former Dimenſion, as ſoon as the impelling Force of the Heart ceaſes. When, therefore, an Artery divided by a Wound diſcharges Blood from its open Orifice, the Reſiſtance of the Blood impelled from the Heart is diminiſhed, and conſequently the Cauſe of the Dilatation of the Artery is leſſened. The Force, therefore, of the orbicular Fibres prevails, by which in every Moment the Artery is more contracted, and thus gradually the Oriſice of the divided Artery is cloſed, if it is not exceſſively large. Beſides, the longitudinal Fibres being by the ſame Cauſes more contracted, diminiſh the Length of the Artery: Hence an Artery, entirely divided, ſhrinks back, and, lodging itſelf between the adjacent ſolid Parts, is by their Bulk and Weight more compreſſed and contracted. If a conſiderable Quantity of Blood is diſcharged from a Wound, the Strength being impaired, and the Impetus of the impelled Blood diminiſhed, the Contraction of the divided Artery is augmented. When a great Toe was cut off by one Stroke of a Chiſſel, I ſaw two Arteries project, perhaps the Length of a geometrical Line beyond the Surface of the Wound; but when they had for a few Minutes diſcharged the Blood freely, they began to be retracted, the Hæmorrhage was leſſened, and two Days after when the Dreſſing was removed, no Blood was diſcharged, the Mouths of the divided Arteries being cloſed up. But if an Artery, which is either very large, or very near the Heart, is divided, the Contraction of ſuch an Artery is not able to reſiſt the Blood impelled with ſo great a Force; hence the Hæmorrhage proves mortal; for the ſmaller the Artery is, and the farther diſtant from the Heart, the Impetus of the Blood impelled from the Heart is the more retarded, becauſe the Reſiſtance it meets with is greater.

If an Artery is wounded tranſverſly, and not cut quite through, the Wound enlarges by a Retraction of the divided Fibres; hence a pepetual Hæmorrhage; and when that ceaſes, an Aneuriſm, from the Tenuity of the Cicatrix yielding to the Force of the circulating Fluid.

In this Caſe, for the Reaſons already ſpecified, a Wound inflicted on an Artery is, in conſequence of the Receſſion of of the divided Parts, more enlarged. But becauſe ſome Parts

as yet cohere, the Extremities of the Artery cannot ſhrink back and lodge themſelves in the adjacent Parts; nor can the orbicular Fibres be ſo contracted as to cloſe the Wound of the Artery. Since, therefore, in this Part there is no Reſiſtance, and a conſiderable one in the other entire Veſſels, ſuch a Wound will continue to diſcharge Blood till the Patient dies, or falls into a Deliquium. But it more frequently happens, that the Blood is diſcharged not in ſuch a Degree as to prove mortal, but only to induce a great Weakneſs. Then there begin to grow gradually on the Part of the wounded Artery, as it were, the Rudiments of a Cicatrix, which are able to check the Effuſion of the Blood moved by ſo weak a Force of the Heart: But afterwards the Strength of the Patient becoming greater, this Part remaining weaker than the other Parts of the Artery, is more dilated, and becomes protuberant. This is called an *Aneuryſm*, or a *Dilatation of the Artery*, becauſe the Artery in that Place no longer remains an equable conical Canal, but is diſtended into a Sack; for as the Largeneſs of Arteries depends on two Cauſes, that is, the Force with which the Blood propelled from the Heart endeavours to dilate the Arteries, and the Reſiſtance of the Sides of the Arteries, and conſequently as the Largeneſs of Arteries is in a Ratio compounded of the direct Ratio of the Impetus of the impelled Blood, and an inverſe Ratio of the Reſiſtance of their Sides, it is ſufficiently obvious than when an Artery is rendered weaker in any Part, it muſt of courſe be more diſtended there. But becauſe by ſuch a Diſtention, ſuch a Part will be ſtill more weakened, the Reaſon is obvious why ſuch large aneuryſmatical Tumors, of which we have many Inſtances in practical Authors, are often formed.

If a large Artery is wounded, and cut quite through, a perpetual Hæmorrhage will ariſe, till Fainting, or Death, is induced. The Parts below the Wound grow tabid, and are conſumed by a putrid but ſlow Gangrene, or elſe drying, are entirely contracted.

In this Caſe the Blood is diſcharged with a full Stream, tho' not with an equable Celerity, but, as it were, by Starts, ſometimes with a ſmall, and immediately after with a greater Force; becauſe at the time the Arteries are in their Diaſtole, the Force of the Heart alone urging the Blood, then expels it through the open Artery. But a great Part of the Impetus convey'd from the Blood to the Heart, is ſpent in dilating the Arteries: Hence only in the time of the Diaſtole of the Arteries, the Blood is propelled with that Exceſs, by which the Force of the Heart ſurpaſſes the Reſiſtance of the Sides of the Arteries. But whilſt, when the Action of the Heart ceaſes the Arteries are compreſſed, the Blood moves with a far greater Celerity through them, and when evacuated from the Body, is of a ſcarlet Colour. From theſe two Signs we know, that the Blood is diſcharged from an Artery, and not from a Vein. But a large Vein, except in highly plethoric Patients, when wounded, diſcharges but a ſmall Quantity of Blood, which is always blackiſh, and leſs red than arterial Blood. If the Artery wounded is large, and very near the Heart, the Death of the Patient ſoon enſues, the whole Blood being in a ſhort time expelled from the Wound. But the Effuſion often only brings on a Deliquium; and if in this Caſe, the Patients are not invigorated by Wine, or Cordials, but left, as it were, half dead, there is ſome Hope, that during the Continuance of ſuch a weak and languid Life, the divided Artery may be contracted and conſolidated. *Boerhaave*, in his Prelections, uſed to give his Auditors a very memorable Inſtance of this Kind, which he himſelf ſaw.

A Countryman over his Bottle was wounded with a Knife under the Axilla; and the axillary Artery being divided, the Blood was diſcharged with a violent Force: Soon after the Patient falling down was thought to be dead, and was laid out as ſuch. Next Day when the Perſons appointed by public Authority to examine Wounds, and give in their Report to the proper Judges with reſpect to their mortal Nature, came to him, they found ſome Warmth about his Thorax, without any other Signs of Life. They deferred examining his Wound for ſome Hours, during which the Patient began gradually to recover, tho' every one imagined that he would ſoon die. But contrary to all Expectation he totally recovered, after continuing a long time in ſuch a weak and languid Condition; only the Arm of that Side remained all his Life dry, and without Juice, almoſt like a Mummy. If, therefore, in an Artery ſo large and ſo near the Heart a Conſolidation could be obtained, it is obvious, that we are not to deſpair in the moſt dangerous Wounds of Arteries, and, perhaps, in ſuch Patients, if weak and languid Life was not augmented by ſtimulating, vinous and cordial Subſtances, more would be preſerved than really are.

If a large Artery, running to the inferior Parts, is divided, and if the Ramifications of no other Artery are diſtributed to theſe Parts, the total Influx of the vital Fluid into them muſt neceſſarily be deſtroyed: This is ſucceeded by a Mortification of thoſe Parts, which in this Caſe may happen in a double manner; for either the Fluids contained in the inferior Parts, being no longer propelled by the Impetus of the arterial Blood, become ſtagnant and corrupted; in which Caſe a putrid, tho' ſlow Gangrene happens, becauſe all the vital Impetus which moves the live Parts to theſe gangrenous Cruſts, and conſequently ſoon makes the Diſorder ſpread, is here wanting: Or the Humours left in the inferior Parts, after the Diviſion of a large Artery, by the proper Contraction of the Veſſels, and Action of the adjacent Muſcles, paſs into the Veins, and return to the Heart; from which, however, nothing can be conveyed to theſe Parts. Hence the Veſſels of theſe Parts being totally deſtitute of Fluids, collapſe, and grow together. And as the moſt Part of the Bulk of the human Body depends upon Humours, ſo the Bulk of thoſe Parts is ſurprizingly diminiſhed, whilſt they are dried and totally contracted, as appears in the Inſtances laſt-mentioned.

Thoſe Nerves which are large and tenſe, when cut quite through, recede, and hide themſelves, draw and extend their ſmall Branches ſituated a little above the Wound, excite Pain and Obſtruction in the neighbouring Nerves; but to the Parts below the Wound, cauſe a Stupor, Immobility, Emaciation, or a Gangrene.

We ſhall now conſider thoſe Phenomena which appear when large Nerves are wounded; for no Wound can injure the Skin without dividing numberleſs nervous Fibrils; but of theſe we do not treat, for we conſider here only the large Nerves as they are demonſtrated by Anatomiſts, and which are ſo many Congeries of other Nerves contained in a common Covering.

As for the Receſſion or Shrinking of the Nerves; that which in large Nerves may properly be called a *Nerve*, and which ariſes from the tender Pulp of the Brain does not ſeem poſſeſſed of ſuch a Degree of Strength, as that when divided to be by its Elaſticity capable of receding or ſhrinking back. But the Nerves which ariſe from the Medulla Oblongata, and Spinal Marrow, and, which at their Origins, are highly ſoft, are covered with tough Coats, that they may be ſafely convey'd to theſe Parts of the Body on which they are to perform their Offices. On theſe Coats depend the Strength and Elaſticity of the Nerves. Hence ſmall nervous Fibrils make a conſiderable Reſiſtance to the Knife in diſſecting Carcaſes. And unleſs it was ſo, the Demonſtration of the Nerves, eſpecially where they are divided into ſmall Ramifications, would be abſolutely impoſſible. When, therefore, a large Nerve is divided, the ſeparated Extremities, by the contractile Force of the Coats covering the Nerves, and of the Veſſels diſtributed through theſe Coats, recede from each other, and conceal themſelves under the adjacent Parts. But the larger a Nerve is, other Circumſtances being alike, the thicker its Coats are; and as the ſmall nervous Congeries, which united form the large Nerve, are, alſo, covered with their proper Coats, hence large Nerves when divided are retracted with great Force.

As for their drawing and extending their ſmall Branches a little above the Wound; the Nerves, as well as the Arteries and Veins, are divided into Ramifications; but the Ramifications ariſing from the Arteries and Veins, every-where communicate with the Cavity of the Trunk whence they ariſe. Hence the Fluids are by a Continuity of Motion convey'd from the Trunk into the Ramifications. But it is otherwiſe in large Nerves, which ſend off ſmaller Nerves like Ramifications from them; for ſuch a large Nerve contains numberleſs ſmaller Congeries of Nerves wrapt up in a common Covering, and theſe ſmaller Congeries conſiſt of others ſtill ſmaller. Nor have the Dexterity and Induſtry of the moſt curious Anatomiſts been hitherto able to find an End of this Diviſion. But from a large Nerve in its Courſe, are every-where diſtributed ſuch Congeries of Nerves, which are called *Ramifications of the large Nerve*, not becauſe they are by a Continuation of Subſtance propagated from it, as in the Arteries and Veins, but becauſe being before united with other ſimilar Congeries, they conſtituted the Bulk of the large Nerve; but now going off from it, they run to their proper Places in order to perform their Offices. All the Nerves, therefore, which like Ramifications are derived from the large Nerve, are ſuch as they are in that Place where the large Nerve ariſes from the Medulla Oblongata, or Spinal Marrow. But in the Arteries and Veins, the Ramifications take their Origins from that Part in which they run off from the Trunk of the greater Veſſels.

When, therefore, a large nervous Trunk is divided, it by receding will, at the ſame time, draw with it the ſmall Ramifications ariſing from it, a little above the Part where the Wound is inflicted. Hence by this violent Diſtraction of the nervous Fibres, intolerable Pains of the adjacent Parts to which

theſe Ramifications run, are produced; and hence there is often a more intenſe Pain in the adjacent, than in the wounded, Part. But that by ſuch a ſimple Diſtraction of the nervous Fibres, intolerable Pain may be produced, is certain from numberleſs Obſervations. When a Phlegmon diſtending the Membrana Adipoſa, is ſuppurating, it elevates the Skin, and diſtracts its Fibres with an intenſe Pain. But when the Pus is formed, and an Inciſion made in the Skin with a Lancet, the Pain forthwith ceaſes, whilſt the diſtending Pus is diſcharged. An intenſe Pain is, alſo, produced by an inflammatory Tumor elevating the tenſe and nervous Membrane of the Auditory Paſſage. And in a Lues Venerea, a Tumor ſometimes ariſing in the Subſtance of the Bone, diſtracts the Perioſteum, and produces a Pain ſo intenſe, that the Patients are ready to lay violent Hands on themſelves.

Beſides, the Coats which cover the large Nerves, and the Ramifications running off from them, conſiſt of numberleſs ſmall Veſſels, as is certain from anatomical Injections. The nervous Ramifications cannot, therefore, be diſtracted by the divided Trunk receding, but the Coats with which they are covered muſt, alſo, be diſtracted, and conſequently the Veſſels *conſtituting theſe Coats, muſt be elongated. But it is certain* that every Cauſe which diſtracts and lengthens Veſſels, diminiſhes their Capacity. Hence may ariſe an Obſtruction, and all its Effects.

As for the Stupor of the Part below the Wound; quite different Actions of the Nerves are obſerved in the human Body; for ſome give a Power of Senſation to the Parts to which they are diſtributed; others produce muſcular Motion, whilſt the Nutrition of the Parts and Life itſelf ſeem to depend on others. That theſe different Actions are performed by different Nerves, is ſufficiently evinced by what happens in Diſeaſes; for often Palſies of particular Parts are formed, and ſometimes an Hemiplegia, in which one Side of the Body becomes incapable of Motion, and is entirely deprived of voluntary muſcular Action, whilſt the Senſation, Heat, and Nutrition of the Part affected remains. In this Caſe there is conſiderable Hope of a Cure. Sometimes together with a Power of Motion, Senſation is loſt, and ſuch a Stupor produced in the Part affected, that it appears no longer to belong to the Body, whilſt the Patient perceives Obſtacles acting on ſuch a Part, as if he only touched them with a ſtretched-out Stick. This is a worſe State of the Diſorder. But when there is a Senſe of Cold in a paralytic Part, and its muſcular Subſtance begins to decreaſe, the Diſorder is generally incurable, as is certain from many Examples of Palſies ſucceeding the Colica Pictonum. Tho' the Nerves ſubſervient to ſo many different Functions, have diſtinct Origins in the Brain, yet being collected into large nervous Congeries, they are diſtributed to the ſeveral Parts. When ſuch Nerves are, therefore, entirely divided, all the Functions depending on the Soundneſs of ſuch Nerves are aboliſhed. Hence ariſe the Stupor and want of Senſation in the Parts below the Wound, as, alſo, their Extenuation, and Privation of Motion, unleſs Ramifications riſing from the Trunk above the Wound are diſtributed to the inferior Parts, or other nervous Trunks ſend Loſt Ramifications to them.

The Reaſon will, perhaps, appear leſs evident, why a Gangrene of the Parts below the Wound often ſucceeds a total Diviſion of a large Nerve. But a Gangrene is ſuch a Diſorder of a ſoft Part, as after the Ceſſation of the Influx of the vital Fluid into the Arteries, and its Efflux through the Veins, tends to a Mortification. If, therefore, a Gangrene ſucceeds the Diviſion of a large Nerve, this vital Influx and Efflux of the Humours muſt have ceaſed; the Arteries, however, and Veins, are entire, and the Humours moving in them laudable, whilſt the Nerves are only divided. But if it is conſidered, that the Motion of the Fluids through the Arteries depends on two Cauſes, that is, the Force of the Heart, and the Action of the Arteries, and if it is at the ſame time obſerved, that the Force of the Heart is in a great meaſure ſpent in dilating the Arteries, and that conſequently the principal Cauſe of the Motion of the Fluids through the Arteries is their own Contraction, which partly depends on their Elaſticity, but more eſpecially on the muſcular Force of the orbicular Fibres, by which the dilated Arteries are contracted, and propel their contained Fluids, and as it is certain from Phyſiology, that the Action of a Muſcle requires the Soundneſs of the Nerve convey'd to that Muſcle, and that the nervous Trunks ſend off Branches to the adjacent Arteries, it will appear, that when the Nerve is deſtroy'd, the muſcular Force of the Artery is, alſo, loſt, by which it propels its contained Fluid: There will, therefore, only remain the Elaſticity of the Artery, and the Impetus communicated by the Heart. But in the Veins the Blood moves with that Motion which it has whilſt it paſſes from the Arteries into the Veins. It is, alſo, aſſiſted by the Motion of the adjacent Muſcles, which becoming turgid when they act, preſs the adjacent Veins, and by that means promote the Motion of the venous Blood. But when the Nerves are divided, the inferior Muſcles remain paralytic, and no Power of Action remains in them. When, therefore, the Impetus of the Blood convey'd from the Arteries into the Veins, is diminiſhed, and the Action of the Muſcles, adjacent to the Veins, defective, the Blood in the Veins begins to move ſlowly, to be accumulated, and become ſtagnant. And thus a greater Reſiſtance ariſes to the Arteries, whoſe Action was before weakened. Hence at laſt the vital Motion of the Fluids through the Arteries and Veins is ſuffocated in the Parts below ſuch a Wound, that is, a Gangrene is formed.

Thus appears the Reaſon of thoſe Diſorders which are obſerved to ſucceed the Diviſion of large Nerves. But medicinal Obſervations evince, that after ſuch Wounds, Gangrenes are formed in the inferior Parts.

Nerves which are tenſe, or tendinous, if pricked, or cut half through, excite Pains; ſometimes at firſt obtuſe, and ſometimes acute; firſt in the wounded Place, afterwards in all the annexed and adjacent Nerves. Hence Heats, Tumors, a Redneſs extending pretty far round the Wound, Fevers, Deliria, Spaſms, Inflammation, an Aperture of the inflamed Part, accompanied with an Evacuation of an acrid, thin, and often a very copious Serum: After theſe, Inſenſibility, Rigidity, Exſiccation, Immobility, or Gangrene, and Death: And indeed all theſe Symptoms are the more violent, the more ſtrongly the Nerve is ſtretched above the firm Parts, or more ſtrongly affixed to them, as, alſo, the more tough and tenacious the Coverings of the Nerve are.

Theſe are the calamitous Caſes in which from a ſlight Wound ſo terrible Symptoms often ariſe. It ſometimes happens that in opening a Vein of the Arm, the Tendon of the BicepsMuſcle is injur'd, or, which happens more frequently, the broad Aponeuroſis, which ariſes from that Tendon, and covers the Muſcles of the Cubit. At this very Moment an intolerable Pain is often perceived, which the Patient expreſſes with miſerable Shrieking.

Sometimes, in the Beginning of ſuch a Diſorder, there is only felt an obtuſe Pain, which a few Hours after is greatly increaſed, and affects the whole Arm as far as the Humerus. Sometimes, alſo, the ſubaxillary Glands become pretty ſoon tumid, and inflamed. The Patients often complain that they perceive in the Wound itſelf, as it were, a live Fire burning the Parts. On the Skin appear oblong red Spots, which are always a bad Sign. In a malignant *Paronychia*, where the Tendons of the Flexor Muſcles of the Finger are affected, a red Zone running longitudinally according to the Direction of the Muſcles which bend the Fingers, through the Skin of the Cubit, is by the ſkilful Surgeons looked upon as a very bad Sign: In the ſoundeſt Man, an acute Fever is often excited; and the Brain being diſturbed partly by the Fever, and partly by the Vehemence of the Pain, Deliriums, Convulſions, and ſometimes Death, enſue.

But tho' Death does not always ſucceed ſuch Wounds of the Nerves, yet terrible Misfortunes are produced by them; for the whole Part becomes greatly tumid and inflamed, and an incredible Quantity of thin Liquor is continually diſcharged either from Bliſters raiſed on the Epidermis, or from the Wound itſelf; but becauſe the Patients perceive a burning Pain, they accuſe the Acrimony of the Humour diſcharged, which, however, when taſted, is found to have no great Degree of Acrimony. Sometimes a Gangrene preys upon the whole Membrana Adipoſa; and in this Caſe a mild Suppuration never happens, but ſinuous Collections of ichorous Matter conſume all the Fat lodged in the Interſtices of the Muſcles, and the pinguedinous Coats of the Tendons are deſtroy'd; hence afterwards the Skin adhering to the Muſcles, and the Tendons and Muſcles for want of the Membrana Celluloſa being concreted with the adjacent Parts, a Rigidity and Immobility of the Part are brought on, and the Uſe of the whole Member is loſt. When by a violent Gangrene, or Suppuration, the Coats of the Nerves in which the Membrana Celluloſa is alſo found, are deſtroyed, the Uſe of theſe Nerves is loſt, and an Inſenſibility, and Extenuation of the Parts brought on. In the ſoundeſt Conſtitutions, ſurpriſing Degeneracies of the Humours, exceſſive Pains, and a Loſs of the Uſe of the Parts, are often induced by the ſlighteſt Puncture, or Wound, of a Nerve.

It is, alſo, to be obſerved, that all theſe Symptoms are the more violent, the more tenſe the wounded Nerve is. Hence ariſes the Danger of Punctures about the loſt Phalanxes of the Fingers, where the ſtrongeſt Tendons are inſerted, and in the Palm of the Hand, where the tendinous Expanſion of the Muſculus Palmaris forms the tenſe and tendinous Part of the Palm. Beſides, this Malignity is increaſed, if the nervous Parts wounded are covered with thick Coats, as is obvious in the moſt dangerous Species of Paronychia, where the Tendon

inſerted in the laſt Phalanx of the Finger, being hurt by a Puncture, or inflamed by any other Cauſe, produces the moſt intenſe Pains, a Phrenitis, Convulſions, a Syncope, and often ſudden Death; or, if the Patient ſurvives this, after violent Agonies, the laſt Phalanx of the Finger becomes mortified, and falls off: And a Clinching of the Hand, which cannot by any Art be removed during the Patient's whole Life, ſhews the dire Remains of the Diſorder. The Reaſon of ſo great a Malignity depends almoſt entirely on this, that the Tendons bending the Phalanxes of the Fingers are ſurrounded with a ſurpriſing Ligament almoſt of a cartilaginous Hardneſs; for if in the Beginning of ſuch a Diſorder, a ſkilful Surgeon, by a bold Inciſion, divides all the Parts to the Bone, and by that means cuts the Ligament ſurrounding the Membranes, the Pain is forthwith leſſened, and all theſe terrible Symptoms are prevented.

The ſame Symptoms, with very little Alteration, happen, when Tendons are differently wounded, and theſe are extremely violent.

The Tendon of a Muſcle, when examined, may be divided into as many Fibrils as the Muſcle itſelf. Between theſe Fibrils are lodged numberleſs ſmall Veſſels, as is evident from anatomical Injections. But theſe Fibrils of the Tendons ſeem to be only Continuations of the muſcular Fibres, which ſeem to derive their Origin from the Nerves which enter the Muſcles. Hence it is not to be wondered at, that the Tendons, which are, as it were, the Offspring of the Nerves, ſhould, when wounded, ſuffer the ſame Misfortunes with the Nerves. But as in a large Nerve there are found Veſſels of all Kinds, and the cellular Membrane ſeparating the nervous Fibres from each other, ſo the ſame is obſerved in Tendons. But becauſe the Tendons are only ſubſervient to the Motion of the Parts, and ſincebe, ſides, the Nerves contribute to Senſation and Nutrition in many Parts of the Body, hence all the ſame Misfortunes do not happen to the Tendons when wounded, as happen to the Nerves. But in both Caſes, there are many Phenomena in common; which, however, are obſerved to be generally more violent in the Tendons than in the Nerves.

Nerves, when entirely divided, unleſs their ſmall Ramifications a little above the Wound are diſtracted by the Receſſion of the divided Trunk, do not create much Pain. But all the Uſes which the inferior Parts received by theſe Nerves are deſtroyed. Thus, alſo, when a Tendon is entirely divided, the Motion of the Part which depended on the Integrity of that Tendon, is deſtroyed; but there is often no more Pain than that which accompanies a ſimple Wound, nor do any more violent Symptoms ſucceed. This I ſaw in a Man in whom the Tendons which erect the Fingers, were cut with a Knife. In the *Mem. de l'Acad. Royale des Sciences An.* 1722. there is a memorable Caſe which confirms this. A nimble Dancer endeavouring by a great Leap to raiſe his Body, broke the *Tendo Achillis* in both Legs, the Skin remaining entire. There were three Fingers-breadths between the Extremities of the Tendons. By a proper Ligature the Patient was reſtored to his natural State; nor at the time of the Rupture, nor during the whole Courſe of the Diſeaſe, did he feel any Pain.

In another Man, the Skin remaining entire, that Part of the ſame Tendon which ariſes from the Gaſtrocnemii Muſcles, was broken, whilſt that Part of the Tendon, which derives its Origin from the *Muſculus Soleus*, lying under the *Gaſtrocnemius*, remained entire. In that Caſe, there was an intenſe Pain, with a ſtrong Inflammation and Tumor of the Part. Hence it appears, that far worſe Symptoms are produced when a Tendon is half divided, than when it is totally divided.

But violent Symptoms are produced by the ſlighteſt Wounds of the Tendons, and by only gently touching a Tendon diveſted of its Coat, the whole nervous Syſtem is in a Moment diſturbed; which is ſurpriſing, ſince the Tendons when covered with their Coats, eſpecially with that pinguedinous Membrane which by its ſoft Oil lubricates them, and renders their Action quick, may, without any great Pain, not only be ſtrongly drawn, but, alſo, ſtitched together; for it is ſufficiently known in Surgery, that the Extremities of divided Tendons are ſeized with Forceps, drawn together, retained in Contact by paſſing a Thread through them, and thus happily cured, whilſt the Part affected is ſo diſpoſed, as that the Muſcles whoſe Tendons are cut remain flaccid. But when a Tendon diveſted of its Coats is but gently touched, terrible Symptoms are produced.

There is no Remedy more efficacious for preventing or mitigating the violent Symptoms ariſing from Punctures of the Nerves and Tendons, than black *Peruvian* Balſam gently warmed, and dropt into the Wound; then by the Application of a warm Spatula it is to be made to penetrate and diffuſe itſelf through all the Parts of the Wound. Afterwards, the whole Limb is to be wrapt up in ſoft Cataplaſms, or Fomentations, or continually anointed with mild oleous Subſtances. If the Wound is ſo ſmall as not to admit the *Peruvian* Balſam eaſily, it is to be a little dilated.

The Application of warm Oil is of great Uſe where the whole nervous Syſtem is irritated, and Convulſions dreaded, as we learn from *Galen*'s own Caſe, as recorded by himſelf, in *Comment.* 1. on *Hippocrates de Articulis*.

And the Membranes of the Tendons and Nerves, which are frequently propagated to the adjacent Parts, are affected with the ſame Diſeaſes.

All Membranes, when wounded, do not produce ſuch violent Symptoms, but only ſuch as are highly tenſe. The tendinous Membrane produced from the Faſcia Lata, and the like Aponeuroſis ariſing from the Glutæus Muſculus, and ſurrounding the ſtrongeſt Muſcles of the Thigh, when hurt by a ſlight Puncture, are ſeized with intolerable Pain. The ſame happens in the Aponeuroſis of the Muſculus Biceps, which is ſometimes hurt in taking Blood from the Arm. If the tenſe Membrane covering the Auditory Paſſage is diſtracted by an inflammatory Tumor, an intolerable Pain ariſes, and a Delirium and often Death ſucceed, as *Hippocrates* tells us in his *Prognoſt.* and *Coacæ Prænotiones*. But Wounds are to be moſt dreaded in thoſe Membranes which are either Productions of the Tendons, or are poſſeſſed of an exquiſite Senſation, and Capacity of Irritation on account of the great Number of Nerves diſperſed through their Subſtance. Thus the Periоſteum, when wounded, ſometimes produces the moſt exquiſite Pain.

A Knowledge of the Laws of Circulation, and a Conſideration of the adjacent Parts, will teach us in what manner the lymphatic, adipoſe, venous Veſſels, and the Veſiculæ, or ſmall Ciſterns, ſuffer in Wounds.

As for the lymphatic Veſſels; the Veſſels by Anatomiſts demonſtrated under the Name of *Lymphatics*, are all of the venous Kind, as is obvious from the Motion of the Fluids thro' thoſe Veſſels from the Ramifications into the Trunks, as, alſo, from the Valves, which *Ruyſch* ſo evidently demonſtrated in his *Dilucidatio Valvularum*, to *Bliſſius*, who denied that the Valves in theſe Veſſels were ever demonſtrated. Theſe lymphatic venous Veſſels, when wounded, produce no great Harm; for conſiderable ſanguineous Veins, when wounded, diſcharge no great Quantity of Blood. But to theſe lymphatic Veins correſpond ſimilar lymphatic Arteries, which, when wounded and not entirely divided, may produce a perpetual and uneaſy Effuſion of Lymph in Wounds. But that there are numberleſs ſuch Veſſels in the Body may be concluded from anatomical Injections made into the Arteries; for in this Caſe thoſe Veſſels, in which there naturally appeared no red Blood, are filled with a coloured Matter. *Ruyſch* ſo filled the Tendons and Ligaments, that they became quite red; there were, therefore, in theſe Parts many ſuch Veſſels, which during Life were filled with a thin Liquor, whoſe Colour was not perceptible: Perhaps, for this Reaſon, a Diſcharge of ſuch Lymph is ſo frequently obſerved in Wounds inflicted about the Joints; and Surgeons often find large Quantities of this Lymph flowing both from Ulcers and Wounds about the Joints.

As for the adipoſe Veſſels; that the Fat of the human Body may be mixed with the Blood, and with it move through the Veſſels, is ſufficiently certain; for in fat Perſons labouring under an acute Fever we obſerve, that in a few Days the Fat is ſurpriſingly diminiſhed; and in ſuch Diſeaſes, oleous Drops have appeared in the Blood taken from the Veins. When *Malpighi*, as he tells us, in *Tr. de Omento, Pinguedine, & Adipoſis Ductibus*, obſerved oleous Streaks growing to the Trunk of the Vena Portæ in Frogs, upon compreſſing them, he ſaw plainly Drops of Oil in the Trunk of the Vena Portæ carried to the Liver along with the Blood. There ſeems, therefore, to be no Doubt concerning this. But it is a Doubt, whether ſuch a pinguious Oil is by a continual Motion conveyed in proper Veſſels like the other Humours, or whether it remains collected in ſmall Cells, which by their recipient Orifices are united with the Arteries, whence this Oil is ſecreted, and which by their emittent Orifices communicate with adjacent ſimilar Cells, as, alſo, with the Veins, which again receive and mix with the other Humours this Fat, ſecreted from the Arteries, and depoſited in Cells. *Malpighi*, in the Work laſt quoted, ſeems to think that there are ſuch pinguedinous Veſſels, which by a continual Courſe convey this Oil, without the Interpoſition of any Cells: But in his poſthumous Works he tells us, that the Fat is preſerved, and accumulated in proper Cells, as in ſo many peculiar Laboratories; but that he durſt not aſſert the Exiſtence of adipoſe Veſſels, tho' he had been very accurate in ſearching for them. But whether the Fat is lodged in ſuch Cells mutually com-

communicating with each other, or whether there are such Pinguedinous Veſſels, when either are wounded, their Contents will be diſcharged, become corrupted, and capable of producing many Miſfortunes. *Ruyſch*, as he tells us, in *Epiſt. Anat. ad Boerh.* upon opening the Abdomen of an Horſe which died after hard Running, found its whole Cavity full of a thin dilated Oil. It is certain, that the Fat is highly lax, eaſily protuberates into a Wound, and produces fungous Fleſh, eſpecially if fat Parts, when wounded, are treated with too emollient Applications.

As for the venous Veſſels; provided theſe are not very large, they are not, when wounded, productive of very dangerous Symptoms; for a violent Hæmorrhage rarely happens from them, except in plethoric Patients, in whom it is not prejudicial, ſince it diminiſhes the Redundance of the Blood. But the adjacent Veins mutually joined by frequent Anaſtomoſes, eaſily ſupply the Defect of the wounded Vein. But it is to be obſerved, that when a conſiderable Vein is known to be wounded, it is dangerous to apply thoſe acrid Styptics which are ſometimes uſed for ſtopping Hæmorrhages from Wounds, ſuch as Vitriol, Alum, and Alcohol; for it is to be feared, leſt theſe being received into the open Wound of the Vein, ſhould enter the Blood, and produce Coagulations therein, which being conveyed through the Vein, which becomes continually broader, to the Right Ventricle of the Heart, and thence impelled into the Pulmonary Artery, may produce the moſt terrible Diſorders.

As for the Veſicles; theſe are all glandular Follicules, in which the Humour ſecreted from the Blood by the Arteries, is collected into a membranaceous Cavity, and thence diſcharged through a proper Emiſſary for particular Purpoſes. When theſe Veſicles are wounded, it is obvious their Uſe muſt be loſt. But of how great Importance this Loſs is, is only to be known from a Knowledge of the Uſe of thoſe Parts. Thus, when the Veſiculæ Seminales are wounded, it is obvious the whole Buſineſs of Generation muſt be diſturbed.

If a Wound lies expoſed to View, its Preſence and Nature is diſcoverable,

1. By the Senſe, after wiping away the Impediments which hinder the Sight of it, and ſtopping the Flux of Blood.
2. By an anatomical Knowledge of the adjacent Parts.

Great Caution is requiſite in a Phyſician or Surgeon called to a wounded Perſon, leſt they ſhould paſs a Judgment of the Wound before they have carefully examined it; for whatever they raſhly pronounce on ſuch an Occaſion may, perhaps, be afterward related to the Judges. If the unlucky Event ſhould prove that the Wound was dangerous, though at firſt Sight they pronounced it but ſlight and inconſiderable, thoſe who plead the Cauſe of the Guilty afterwards, brand the Character both of the Phyſician and Surgeon, as if the Misfortunes ſucceeding the Wound ought to be imputed to their Want of Skill. Prudent Surgeons generally aſk the Phyſician preſent, what he thinks of the Wound, and of the Effects to be dreaded from it, by which means they ſave their Reputation. It is therefore proper, that all Phyſicians ſhould embrace every Opportunity of ſeeing Wounds, and ſevere Operations, that thus they may gradually accuſtom themſelves to look upon the Calamities of Mankind with Intrepidity. *Hippocrates*, in *Tr. de Habitu*, tells us, "That the Phyſician ſhould look upon dangerous Wounds, handle ſuch as are diſagreeable, and by the "Calamities of others endeavour to prevent his own Miſeries; "for by Art the Sick are freed from the greateſt Misfortunes, "Diſeaſes, Pains, Sorrow, and Death." Theſe Misfortunes are alleviated by the ſalutary Art; but it often happens, that Phyſicians who are well acquainted with the Fabric of the Body, are by the Sight of the Wound, the Cries of the By-ſtanders, and the Complaints of the Patient, ſo diſturbed, as to paſs a quite different Judgment from what they would have done, if they had conſidered all Circumſtances with a calm and ſedate Mind.

A Wound is not therefore to be examined precipitately, but with the greateſt Attention of Mind; for at the firſt Dreſſing the Surgeon may ſafely do that which afterwards cannot be commodiouſly done, becauſe on the ſucceeding Days the Wound often becomes ſo tumid, painful, and inflamed, that it cannot bear the Searching of the Probe without great Pain and Irritation.

If a Wound is inflicted on a Part of the Body expoſed to View, all Impediments which hinder the diſtinct Examination of the Wound are to be removed from it. Tepid Water with Honey, Wine, and a little Sea Salt, is to be uſed for waſhing the Wound, by which means the Thromboſes of concreted Blood are removed, and the whole Surface of the Wound is diſcovered. But to know as the Blood flows impetuouſly from the Wound, there is ſuch an Inundation, that nothing can be diſtinctly obſerved. For this Reaſon the Hæmorrhage is to be ſtopt, which in the Limbs is eaſily done by compreſſing the

Trunks of the Veſſels by a proper Ligature; and in other Parts of the Body, unleſs very large Veſſels are wounded, the Hæmorrhage may be ſtopt with warm Alcohol of Wine.

As for an anatomical Knowledge of the adjacent Parts, nothing certain can be determined without it; for the Inſpection of a Wound may diſcover its Largeneſs, Deepneſs, and Direction; but a Knowledge of the Parts adjacent to the Wound, is only to be obtained from Anatomy. *Euſtachius*'s Tables, in which the Situation of the large Arteries, Veins, and Nerves, as, alſo, the Origins and Courſes of the Muſcles, are ſo accurately marked, may be of great Uſe for this Purpoſe, that thus, knowing the Place of the Wound, we may be able to determine what Parts of the Body are wounded, and what Injury is to be dreaded from the Wound.

The Preſence and Nature of a Wound, which is not expoſed to View, is diſcovered,

1. By Anatomy; by the Situation of the Perſon when wounded; and the Manner and Force of the Stroke.
2. By an Impediment to the Action of a particular Part, ſubſequent to the Wound.
3. By the Humours diſcharged from the Wound, either within or out of the Body.
4. By the Affections which are conſequent to the Wound, as Pain, Hiccup, Spaſms, Tumor, &c.

The Knowledge of a Wound is far more difficult where the Whole of it cannot be viewed by the Eye. The Entry of the wounding Inſtrument into the external Integuments is ſeen, but how far it has penetrated, cannot often be diſcovered. It will, however, be of great Uſe to the Surgeon carefully to attend to the following Circumſtances:

1. By Anatomy we know what Parts are ſituated in the Place wounded; but the Situation of the Patient at the time he received the Wound, and of the wounding Perſon when he inflicted it, will demonſtrate the Way in which the wounding Inſtrument penetrated into the internal Parts of the Body. If the wounding Inſtrument can be had, it may ſometimes be known from the Largeneſs of the Wound in the Integuments how deep it has been driven. All theſe things ought to be carefully inquired into, both from the Patient, and from thoſe who were preſent when the Wound was inflicted. Thus, for Inſtance, if a Sword is paſſed in a perpendicular Direction between the ſixth and ſeventh true Ribs, it will penetrate into the Cavity of the Abdomen: But if a Man receives a Wound with his Body reclined backwards, whilſt the Sword is paſſed from the interior Parts upwards, it may penetrate into the Cavity of the Thorax. But if when the Body is inclined forwards, a Sword enters the ſame Part, it may paſs through the whole Abdomen, even to the Pelvis. Thus, alſo, a Wound inflicted on the Side may run a great Way under the Integuments, and above the Ribs, eſpecially in fat Perſons, without penetrating into the Cavity of the Thorax. When we examine into the Deepneſs of a Wound by means of the Probe, it is of great Importance to know the Situation of the Patient when the Wound was received, and to place him in that very ſame Situation; for unleſs this is done, it often happens, that the Membrana Adipoſa ſtops up the Wound. Thus, in Veneſection, eſpecially in fat Perſons, it often happens, that at firſt the Blood flows out with a full Streain, but immediately ſtops upon the ſmalleſt Change of Situation in the Arm, becauſe the Fat ſubjacent to the Skin interpoſes itſelf between the Orifice in the Skin, and that in the Vein.

2. As we know from Phyſiology the things requiſite to the Soundneſs of the particular Functions of the Body, ſo we eaſily ſee from the Action either hindered, or totally aboliſhed after the Wound, whether ſome or all of the Requiſites neceſſary for that Action are deſtroy'd by the Wound. Thus if a Wound penetrating into the Cavity of the Abdomen is immediately ſucceeded by an exceſſive Languor of the vital Actions, if the Heart palpitates quickly, if the Pulſe is quick and unequal, the Face and Lips pale, and the Extremities cold, we conclude, that in conſequence of a Diviſion of ſome large Veſſels, a conſiderable Quantity of Blood is diſcharged into the Cavity of the Abdomen. If a Wound inflicted in the Neck is without a conſiderable Hæmorrhage ſucceeded by the like Symptoms, it is to be dreaded, leſt the Nerves ſituated here, and running through the vital Viſcera, are wounded. If after a Wound of the Head the ſame Symptoms happen, it is thought that the Cerebellum is wounded, or compreſſed by the extravaſated Humours. When Wounds of the Head are ſucceeded by an Abolition of all the animal Functions, the ſame Misfortunes are thought to have befallen the Brain itſelf. If after a Wound of the Back the inferior Parts are deprived of Senſation and Motion, we conclude that the Spinal Marrow is wounded. The ſame holds true with reſpect to the other Actions of the Body.

3. If

3. If after a Wound of the Thorax a red frothy Blood is either diſcharged from the Wound, or vomited up, we know that the Veſſels of the Lungs are divided. If from a Wound in the Abdomen Chyle is diſcharg'd, a Wound of the ſmall Inteſtine is denoted; but if the Fæces, a Wound of the large Inteſtines is indicated. If Blood is diſcharg'd by the urinary Paſſages, we know that the Kidneys, Ureters, or Bladder, are wounded.

4. A Pain ſuddenly ſucceeding a Wound, denotes that the Nerves, Tendons, or tendinous or nervous Membranes, are wounded; but an Hiccough, and Spaſms, may be produced by Wounds inflicted in different Parts. After exceſſive Hæmorrhages, an Hiccough, and Convulſions, often ariſe; and are, by *Hippocrates*, in *Coac. Prænot. & Aphor.* in ſuch a Caſe, pronounced very bad Symptoms. *Hippocrates* condemns an Hiccough ariſing from the Iliac Paſſion. Hence it is very probable, that this Diſorder may be conſequent to Wounds of the Inteſtines. An Hiccough, alſo, ſucceeds Wounds of the Diaphragm, *Oeſophagus*, Stomach, and Head: Hence this Symptom, when conſider'd alone, always ſhews the malignant Effect of the Wound, tho' it does not always infallibly indicate the Part wounded.

Sudden Tumors, ſucceeding Wounds, either ſhew that the Humours are extravaſated, and collected in preternatural Parts; or that the Air has enter'd into the Cavities of the Body, thro' the Wound, and is ſurpriſingly dilated by the Heat. We have conſider'd thoſe ſurpriſing Tumors ſucceeding Wounds of the Breaſt, whilſt the Air entering the *Membrana Adipoſa*, diſtends the whole external Surface of the Body in an incredible manner, under the Article THORAX.

From a Knowledge of what has been ſaid, the Event of Wounds may be prognoſticated. As,

1. The Death or the Life of the Perſon wounded.
2. The poſſible, impoſſible, entire, or partial Cure.
3. The eaſy, difficult, long, or ſhort Cure.
4. The Effects of the Wound remaining after the Cure is perform'd, as Conſumption, Inſenſibility, Immobility, Deformity, &c.

When, by the Aſſiſtance afforded by the modern Improvements in Surgery, and a due Examination of all the Circumſtances mention'd in the two preceding Aphoriſms, we find the Diagnoſtic of a Wound, which teaches us the Part wounded, and the Actions of the Body, either aboliſh'd, or hinder'd by it, we may then foretel the Event of the Wound; and thoſe Symptoms which may proceed from the Wound, as their Cauſe, will become obvious. This is call'd the Prognoſtic of Wounds; in determining which, great Caution is neceſſary: For, as *Celſus*, in *Lib.* 5. *Cap.* 26. informs us, "It is the Part of a "prudent Surgeon not to meddle with a Patient who cannot "be preſerv'd, leſt he ſhould be thought to have deſtroy'd him "who fell the Victim of his own Diſorder. But where there "is great Dread, without abſolute Deſpair, he is to acquaint "the Friends of the Patient with the Difficulty of the Caſe, "leſt, failing of Succeſs, he ſhould be thought either deceitful, "or ignorant. But as theſe are the Meaſures taken by prudent "Surgeons, ſo Quacks give out, that ſlight Caſes are of the laſt "Importance, that their Cures may appear the more ſurpriſing."

But it is to be obſerv'd, that there are ſome Caſes, in which the moſt ſkilful Anatomiſts may be deceiv'd, in determining the Parts injur'd by a Wound: For the Situations of the internal Viſcera have frequently been found very different from thoſe which they commonly obtain. For Inſtances of this Kind, ſee *Journal des Sçavans, Janvier* 1689. *Act. Lipſienſ. An.* 1690. and *Carol. Drelincurt. Opuſcul.*

In theſe Inſtances ſuch Phenomena happen'd in ſound Perſons, and the Change of Situation in the Viſcera obtain'd from the very Beginning of their Lives. But it is, alſo, certain, from Experience, that the Situation of the Viſcera is frequently chang'd by Diſeaſes. Thus, in *Mem. de l'Academie Royale des Sciences, An.* 1716. we are told, that, in a certain Woman, the Situation of the Stomach, as, alſo, of the other abdominal Viſcera, was found ſurpriſingly chang'd by frequent Vomitings. It is highly probable, that ſuch Changes in the Situation of the Viſcera are very frequent: For in thoſe Careaſes, ſays *Vanſieriten*, which I have either diſſected myſelf, or ſeen diſſected by others, many ſuch Changes were obſervable. Thus I have ſeen the Spleen fallen down into the Pelvis, the Bottom of the Stomach reaching below the Navel; that Part of the *Inteſtinum Colon*, which lies below the Stomach, ſo far diſtant from it, as to be lodg'd below the Navel, and form an Arch, the convex Part of which lay towards the Pelvis, and the concave towards the Stomach.

Now the Errors which muſt neceſſarily happen hence in the Prognoſtic of Wounds, ſeem hardly to be avoidable, ſince theſe Things can neither be predicted, nor known, by any Signs.

Beſides, the particular Idioſyncraſy of the Perſon wounded may greatly change the Effects of the Wound. Thus ſome are

ſo faint-hearted, as to fall into a *Deliquium*, upon ſeeing the Blood flow from the Wound even of another Perſon. Hence *Hippocrates*, in *Prorrhetic. Lib.* 2. tells us, "That there are "many Wounds inflicted in Places which are not dangerous, "whilſt, at the ſame time, the Wound itſelf is ſo painful, that "the Patient is depriv'd of a free Reſpiration; whereas others, "where there was no Danger, have, on account of the Exceſs "of Pain, breath'd freely, but been ſeiz'd with a *Delirium*, "and dy'd feveriſh: For whoever have Bodies prone to Fevers, "or Minds eaſily ſubject to Commotions, ſuffer ſuch Misfor"tunes. But the Surgeon is neither to be ſurpris'd, nor afraid, "at theſe Things; conſidering that both the Souls and Bodies "of People differ widely from each other, and are of great "Efficacy in Wounds and Diſeaſes."

By means of theſe Cautions we are to determine the Prognoſtic of Wounds; in which we are to examine,

1. Whether the Wound is ſuch as to produce infallible Death as its phyſical Effect; or whether, after the Wound, Life may be preſerved.

2. *With reſpect to the poſſible, impoſſible, entire, or partial Cure*; a Wound *is ſaid to be cured*, when the Parts ſeparated from their natural Cohetion by the wounding Cauſe, are again concreted, and united. Thus, if the Finger is tranſverſly cut, in ſuch a manner as only to cohere by a ſmall Portion of the Skin, the Cure of ſuch a Wound cannot be promiſed. The Patient may, indeed, be preſerved, tho' without this Part of his Body: Beſides, it often happens, that, after the Cure of the Wound, all the Uſes are not reſtored to the wounded Part, which it had in its natural State; in which Caſe there is not a total, but a partial Cure. Thus if a conſiderable Nerve is totally divided by a wounding Cauſe, there will never be a total Cure of ſuch a Wound; for all thoſe Functions which depended on the Soundneſs of ſuch a Nerve, will ever after be aboliſh'd.

3. *With reſpect to the eaſy, difficult, long, or ſhort Cure*; unleſs theſe Things are mentioned at the Beginning, the Blame of a difficult, or long-protracted Cure, will be often thrown on the Phyſician, or Surgeon. A Cure is ſaid to be eaſy, which is performed without great Pain to the Patient, or Trouble to the Surgeon. When the Tendon of the Muſcle which erects the Thumb, being divided, ſhrinks back under the Integuments, ſuch a Wound cannot be cured, and the natural Uſe of the Part reſtored, unleſs the Wound is dilated, the Extremities of the divided Tendon laid hold of with Forceps, brought into Contact, and retained in that State by proper Suture; but theſe Things cannot be done without Difficulty and Pain: Prudence requires, that theſe Things ſhould not always be revealed to the Patient, but rather indicated to his Friends, leſt the Misfortunes of a tedious Cure ſhould be afterwards imputed to the Phyſician, or Surgeon.

Thus when a Wound with conſiderable Loſs of Subſtance is inflicted, whilſt a large Portion of the Skin and *Membrana Adipoſa* is removed by the Edge of the Sword, a conſiderable Space of Time is required for the Reſtitution of what was loſt. If a ſimple Diviſion of the Skin and *Membrana Adipoſa* is only made by the wounding Inſtrument, when the Lips of ſuch a Wound are duly united, it will be pretty ſoon conſolidated, provided the Body of the Patient is ſound; but if he labours under a conſiderable Cacochymy, the Cure will be far longer, and more difficult. Theſe Things ought to be determined in making the Prognoſtics of Wounds, becauſe many are of Opinion, that Surgeons, from a ſordid View to Gain, protract the Cure of Wounds far longer than is neceſſary: But no honeſt Surgeon will ever be guilty of ſuch a Piece of Wickedneſs.

4. *As to the Effects of the Wound remaining after the Cure is perform'd, as Conſumption, Inſenſibility, Immobility, Deformity*, &c.; theſe Things are, alſo, to be carefully attended to: In Wounds which are not mortal, Judges generally proportion the Puniſhment of the Inflictor to the Injury which the Patient ſuſtains from the Wound inflicted: Hence the Advocates for the Offender uſually employ all their Cunning and Oratory in charging the Symptoms ſubſequent to the Wound, upon the Phyſician or Surgeon to whoſe Care it was committed. For this Reaſon, at the firſt Dreſſing, from an anatomical Knowledge of the Part in which the Wound is inflicted, and from the Functions injured after the Wound, thoſe Misfortunes ought to be indicated, which will follow the Wound, tho' ever ſo well cured; or, if this cannot be certainly determined, a Caution is to be given with reſpect to the particular Misfortunes to be dreaded after the Cure of the Wound: For in no Caſes are Surgeons more injuriouſly treated than in theſe; ſince after the Wound is cured, if the Motion of the Part is loſt, they generally tell who cured the Wound, and not who inflicted it; ungeneroufly laying on the former that Blame, which is the juſt Portion of the latter. When the only Artery which is diſtributed to a Part is divided, we foretel that an Atrophy of the Part will ſucceed the Cure: If a large Nerve, diſtributed to a Part, is deſtroyed, we prognoſticate the Inſenſibility, and often

the Immobility, of the Part. If a Wound cannot be cured till after a long and violent Suppuration, when, for Inſtance, the Parts of a wounded Bone ought to be gradually ſeparated, the *Membrana Adipoſa* being thus conſumed, we prognoſticate that there will be a deep and unſeemly Cicatrix.

Unavoidable Death, ariſing from a Wound, may proceed from five Effects; ſo that the following Wounds will neceſſarily prove mortal.

In this Aphoriſm are enumerated thoſe Wounds which neceſſarily, and, in Spite of the higheſt Art hitherto known, remove that Condition of the Body which is abſolutely requiſite, that the Commerce between the Body and Mind may continue, or be reſtored, and not neceſſarily be deſtroy'd. But from Phyſiology it is abſolutely certain, that the muſcular Action of the Heart, the Reception of the Blood into the Heart, and the Expulſion of the received Blood from it, are indiſpenſably neceſſary. Hence, in N° 1. are enumerated thoſe Wounds, which hinder the Influx of the nervous Fluid requiſite for the muſcular Action of the Heart. In N° 2. thoſe Wounds are enumerated, which, in conſequence of a Diviſion of the Cavities of the Heart, hinder any Blood from being contained in it. In N° 3. are enumerated thoſe Wounds, which, in conſequence of the Dilatation of the Orifices of the wounded Veſſels, hinder the diſcharged Blood from returning to the Heart. But as in an human Creature, after it is brought into the World, the Right Ventricle of the Heart cannot evacuate the Blood contained in its Cavity, except thro' the Lungs, and as to this their Dilatation by Reſpiration is requiſite, for this Reaſon, in N° 4. are enumerated thoſe Wounds which totally deſtroy Reſpiration. Then, laſtly, ſince, by an inevitable Effect of Life and Health, many both of the ſolid and fluid Parts are daily loſt, hence it is requiſite, that, in order to preſerve Life, as many Parts of the ſame Kind ſhould be perpetually reſtored both to the Solids and Fluids, as were loſt by the Energy and Activity of Life. But the Loſs of all theſe is reſtored by the Aliments eaten, and by the natural Actions changed into a Subſtance ſimilar both to the ſolid and fluid Parts of the human Body. For this Reaſon, in N° 5. are enumerated thoſe Wounds which deſtroy the Soundneſs of thoſe Parts abſolutely requiſite to this Work.

To theſe five Heads we may therefore reduce all mortal Wounds.

First, Thoſe which intercept the Influx of the nervous Fluid into the Heart, from the *Cerebellum*; ſuch as Wounds of the *Cerebellum*, or Brain, ſo deep as greatly to injure the *Medulla Oblongata*; or when the Texture of the Veſſels within the *Cranium* is ſo diſſolv'd, as to admit of an Extravaſation of their Contents, which deſtroy Life by Preſſure or Putrefaction, and which cannot be come at by means of the Trepan, by reaſon of the Condition of the Place; as it happens in Wounds of the interior Part of the Orbit of the Eye, the temporal Bones, the *Os Ethmoides*, and the Baſis of the *Cranium*, thoſe which deeply injure the ſpinal Marrow; or which divide the cardiac Nerves.

As the Heart is a true Muſcle, ſo its Action requires all thoſe Things, which from Experience we know to be neceſſary for the Action of the other Muſcles of the Body. But it is certain from Experiments, that the Influx of the Spirits thro' the Nerves into a Muſcle, is requiſite to its Action; the ſame will, therefore, obtain in the Heart: It is, alſo, certain from medicinal Obſervations, that when by violent external Cauſes, the Blood is ſo extravaſated within the *Cranium* as to compreſs the whole Brain, all the Senſations and Motions depending on the Will are totally aboliſhed; whereas the Action of the Heart in the Beginning of ſuch a Diſorder, is rather increaſed, as is obvious from the Strength and Celerity of the Pulſe in apoplectic Patients. But it is known from Anatomy, that the *Cerebellum* is very ſafely defended, ſince it lies under the Brain, and being covered with the *Dura Mater*, cannot be ſo eaſily compreſſed by the extravaſated Humours, as the Brain itſelf. But when the ſame Cauſes continuing or increaſed begin to compreſs the *Cerebellum*, which being of a more ſolid Contexture, therefore more reſiſts compreſſing Cauſes, then the Action of the Heart ceaſes, and Life is deſtroyed. Hence we know that the *Cerebellum* communicates, thro' the Nerves, the Spirits requiſite for the muſcular Motion of the Heart. Wounds, therefore, which greatly hurt, or totally deſtroy, the *Cerebellum*, are juſtly accounted mortal. This is confirmed by Experiments made on live Animals. Thus *Perrault*, in his *Mechanique des Animaux*, *Partie 2. Cap. 7.* informs us, that, when the Brain of a large Dog was cut like Chequer-work, almoſt for an entire Hour, he died the very Moment his *Cerebellum* was wounded. *Raymund Vieuſſens*, in his *Neurographia Univerſalis*, *Lib. 1. Cap. 20.* tells us, "That when, after opening the ſuperior Part of a "Dog's Head, the *Cerebellum* is cut into Pieces, and taken "out of the *Cranium*, the Animal dies almoſt forthwith, tho' "the Brain, and Trunk of the *Medulla Oblongata*, are by no "means hurt." The ſame Experiment was made by *Bhonius*, in young Puppies, whoſe *Craniums* were as yet ſoft, and their Sutures gaping, by driving a Knife into the *Cerebellum*, upon which he ſaw them expire, after ſlight Concuſſions of the external Parts; but upon removing the *Cranium*, it appeared, that the Inſtrument, in one of the Animals, had perforated almoſt the whole Compages of the *Cerebellum*; whereas, in the other, it had only penetrated its medullary *Nucleus*.

Nor is it any Objection againſt the mortal Nature of Wounds of the *Cerebellum*, that *Wepfer*, in *Tr. de Cicutæ Aquaticæ Hiſtoria & Noxæ*, in Puppies whoſe Heads were cut off, ſaw the alternate Syſtole and Diaſtole of the Heart remain for ſeveral Hours: For here we treat of the durable Action of Life, and not concerning that ſurpriſing Property of the Heart, by which, when taken out of the Body, it continues its Motion after Death: For *Wepfer* by no means intended to deduce from his Experiments any thing contrary to this Doctrine, as he himſelf affirms.

But ſince it is certain, from Anatomy, that no Nerve is derived from the *Cerebellum*, but that the whole medullary Subſtance of the *Cerebellum* being collected, goes off into the *Medulla Oblongata*, from which the Nerves afterwards ariſe, it is ſufficiently obvious, that conſiderable Wounds of this *Medulla Oblongata* muſt neceſſarily prove mortal. Now if we conſider that the *Cerebellum* and *Medulla Oblongata* are ſo ſafely lodged that they cannot be wounded without a conſiderable Wound of the Brain itſelf, and of the large Veſſels and Muſcles, the mortal Nature of Wounds of theſe Parts will be ſtill more obvious.

But Wounds of the Brain itſelf, tho' pretty large, are not always mortal; as is obvious, from many Obſervations ſpecified under the Article CAPUT.

When ſanguiferous arterial Veſſels, or large venous Veſſels, are by any Cauſe ruptured, they diſcharge their contained Blood, as, alſo, that which by the continual Force of the Heart, would have flowed thro' the Veſſels, if ſound. But the hard Bone of the *Cranium* cannot yield, and naturally the Brain exactly fills the Cavity of the *Cranium*; for which Reaſon, the extravaſated Blood muſt neceſſarily compreſs all the Parts contained in the Cavity of the *Cranium*. Hence, immediately after an Extravaſation of Humours within the *Cranium*, the Functions of the Brain begin to be aboliſhed, and afterwards the ſame Cauſe continuing to act, the *Cerebellum* and *Medulla Oblongata* are compreſſed, and Life by that means is deſtroy'd. If the Blood extravaſated from the ruptured Veſſels, is not in ſo large a Quantity, as by its Compreſſion to remove the Action of the Brain, *Cerebellum*, and *Medulla Oblongata*, it may yet prove prejudicial in another manner: For the Humours of the human Body when extravaſated, are by a ſpontaneous Degeneracy corrupted, tho' more ſlowly where all Acceſs of the Air is denied; but at laſt becoming putrid, and acrid, they bring on Inflammations and Suppurations of the Brain, by which they conſume and deſtroy its tender Fabric. Hence, in practical Authors, many Obſervations prove, that Wounds and Contuſions of the Head, which were thought very inconſiderable, have after a pretty long time brought on ſudden Death. In Carcaſes there has appeared a large Quantity of ichorous or purulent Matter, and often a conſiderable Conſumption of the Brain, by this means. Inſtances of this Kind may be ſeen in *Bonetus's Sepulchretum Anatomicum*.

In ſuch Caſes, therefore, the principal Hope of Cure is placed in the Operation of the Trepan, in order to procure a free Diſcharge to the Humors; but if ſuch is the Condition of the wounded Part, that this Operation cannot be performed in it, inevitable Death will follow: But the Places in which this Operation cannot be performed, are, principally, theſe following:

The inferior Parts of the Orbit of the Eye; that is, that Part of the Orbit of the Eye which conſtitutes the greateſt Part of the Bottom of the *Cranium*, and which lies below the *Cranium*, but conſtitutes the ſuperior *Lacunar* of the Orbit of the Eye; for this Part of the Orbit is formed by the *Lamella* of the *Os Frontis*, which in a prepared *Cranium* is pellucid, and hardly ſo thick as the Nail of one's Finger: But this *Lamella*, on which the anterior Parts of the Brain, together with pretty large Blood-veſſels, lie, is, on account of its Thinneſs, perforated by a ſlight Wound, in which Caſe the extravaſated Blood is lodg'd under the Brain, in the very Baſis of the *Cranium*; for which Reaſon it cannot be evacuated by the Trepan. Hence it appears how dangerous Wounds, inflicted in this Part, are. *Ruyſch*, in *Obſervat. Anatom. Chirurg. Centur. Obſervat.* 54. gives us an Account of a Man, who was, with the Extremity of a Stick which was not very ſharp, wounded in the Orbit of the Left Eye; and tho' the Wound appeared inconſiderable to thoſe who had the Care of it, yet the Patient ſoon after died. And when, by public Authority, the Cauſe of his Death was enquired into, the *Cranium* being divided with a Saw, the Wound appear'd to have penetrated pretty deep into the Brain.

As

As for the inferior Parts of the temporal Bones; the Pits appearing in prepared Sculls, and excavated by the Pulsation of the Arteries of the *Dura Mater*, demonstrate, that considerable Arteries are distributed about the Temples: When, therefore, these are wounded, the extravasated Blood tends directly downwards to the Basis of the *Cranium*; and, on account of the large temporal Muscles situated here, there is no Place for the Trepan: All the Misfortunes are, therefore, to be dreaded, which are to be expected from an Extravasation of Humors producing unhappy Effects, either by their Compression, or Corruption.

As for the inferior Part of the Os Ethmoides; perhaps, at first, this Bone may seem to be so safely lodged, that it cannot be easily wounded: But if, when the Head is reclined backwards, a sharp-pointed Sword is driven up the Nostrils, it may easily penetrate as far as that Bone. Besides, if in the lateral Part of the Orbit of the Eye towards the Nose, a Wound is inflicted, it may by a gentle Force perforate that *Lamella* of the *Os Ethmoides*, which constitutes a Part of the Orbit of the Eye, and is called the *Os Planum*, and thus pass into the Cavity of the *Cranium*. *Bonetus*, in *Sepulchret. Anatom.* gives us an Instance of a Student of Law, who receiving a Prick of a Sword below the Orbit of the Left Eye, died apoplectic twenty-four Hours after. Upon laying open the *Cranium*, it appeared that the Wound had penetrated thro' the Orbit of the Eye and the *Os Ethmoides* near the *Crista Galli*, into the Right Ventricle of the Brain. The Basis of the Brain and Region of the *Cerebellum* were, also, full of Blood. It is sufficiently obvious, that there were no Hopes of a Cure in such a Case.

Other Wounds, penetrating into the Basis of the *Cranium*, prove infallibly mortal, for the same Reasons.

As to Wounds of the spinal Marrow; after nine Pairs of Nerves have arose from the *Medulla Oblongata* within the *Cranium*, all the rest of the medullary Substance of the Brain and *Cerebellum*, collected into one Trunk, and defended by the *Vertebra*, is stretched out to the *Os Sacrum*. From this spinal Marrow all the Members below the Head, and many of the *Viscera*, receive a great Part of their Nerves: If, therefore, a considerable Wound is inflicted in the superior Part of the spinal Marrow, its medullary Substance is destroy'd, and all the Action of the Brain and *Cerebellum* on the inferior Parts is remov'd, so far as it depends on the Soundness of these medullary Fibres: For the eighth Pair of Nerves called the *Par Vagum*, and the intercostal Nerves arising higher from the *Medulla Oblongata* within the Cavity of the *Cranium*, are distributed to many of the vital *Viscera*. Hence such a Wound is not succeeded by immediate Death, tho' Patients wounded in this manner all die sooner or later, according as the spinal Marrow is wounded deeper, or nearer its Origin. The Reason of this is sufficiently obvious; for the whole *Cerebrum* and *Cerebellum*, by their Fabric, secrete from the arterial Blood that highly-subtile Fluid, which, being thus secreted, is conveyed to all the Parts of the Body thro' the medullary Fibres, and the Nerves consisting of those Fibres collected together. Whilst, therefore, so long as the Quantity of the Liquid conveyed to the found secreting Organ is the same, so great a Number of Vessels, which ought to contain and convey the secreted Liquor to its proper Places, is destroy'd, it follows, that the Function of the secreting Organ must first be disturb'd, and then destroy'd: Besides, large Blood-vessels are at the same time generally hurt. Hence the extravasated Humors easily reascend into the Cavity of the Brain, after the Cavity formed by the *Vertebræ* is first full. But that such Wounds are mortal, is certain, from practical Observations. Thus *Bonetus*, in *Sepulchret. Tom.* 3. tells us of a Countryman who falling from a Tree had the second *Vertebra* of the Neck luxated near the *Atlas*, as afterwards appear'd in the Carcase. He liv'd for some Days in this manner, and then died: But others subjected to the like Misfortune, have died in a very short time.

Sennertus, in *Tom.* 3. *Lib.* 5. *Part* 4. *Cap.* 3. informs us, "That he knew a certain Butcher, who, when intending to "kill Oxen, did not strike them in the usual manner, with an "Ax in the Forehead, but thrust a small Knife into that Part "of the spinal Marrow where the Head is joined to the *Ver-*"*tebræ* of the Neck; by which means the Animal immedi-"ately dropt down, as it were, apoplectic." *Galen*, also, observes, that Bulls in which the spinal Marrow is divided hard by the first *Vertebra* of the Neck, immediately fall down, and lose both Voice and Respiration.

In Puppies, the like Experiment was attended with the same Success.

Hippocrates, in *Lib.* 1. *de Morbis*, pronounces Wounds of the spinal Marrow mortal; and in *Prorrhet. Lib.* 2. *Cap.* 11. he tells us, "That if the spinal Marrow is disordered, either "by a Fall, by any other Cause, or spontaneously, the Patient "loses the Use of his Limbs, in such a manner, as not to per-"ceive when they are touched: Nor, in the Beginning of the "Disorder, does he discharge his Excrements and Urine, un-"less with Difficulty: But when the Disease is of long stand-"ing, both Excrements and Urine are evacuated spontaneously, "but the Patient dies soon after this." In this Place it is obvious, that *Hippocrates* treats of a Wound in the inferior Part of the spinal Marrow; notwithstanding which, he pronounces it mortal. But that some have escap'd, or, at least, led a very miserable Life for a long time after the spinal Marrow has been compressed by a Luxation of the *Vertebræ* about the Loins, is certain from *Hildanus*, in *Observat. Chirurg. Cent.* 5.

But I know of no Instance in which any one has survived a Wound of the superior Part of the spinal Marrow.

With respect to a Division of the cardiac Nerves; thro' these is convey'd that fine Fluid separated, by the Fabric of the *Cerebellum*, from the purest arterial Blood, and which is requisite to the muscular Motion of the Heart.

In the *Pericardium* the Heart remains free, and adhering to no Parts except the Vessels, which either enter or run out from the Heart. Now all these Vessels with which the Heart is connected in the *Pericardium*, are free, moveable, and adhering to no adjacent Parts: The Nerves, therefore, which enter the Heart, must be convey'd to it along with the Vessels with which it is annex'd; for the Heart adheres to no other Part in the *Pericardium*: Hence the Nerves distributed to the Heart do not remain free, as one might possibly conjecture from anatomical Tables, but are applied to the Veins which convey the Blood into the Cavities of the Heart, and to the Arteries which receive the Blood expelled from the Heart. Physiology, from this surprising Position of the Nerves running to the Heart, explains its Systole and Diastole, whilst the same Cause which produces the Motion of the Heart, the Moment after, by the necessary Fabric of the Parts, destroys it. Hence, in one Moment of Life, the Heart is, as it were, contracted by a violent Spasm, and the next Moment becomes perfectly paralytic.

Hence it is obvious, that near the Heart the cardiac Nerves cannot be wounded, without wounding the large Vessels about the Heart; in which Case, inevitable Death will follow the Wound. But here we only consider simple Wounds of the Nerves of the Heart. But anatomical Observations inform us, that all the Nerves which are distributed to the Heart arise from the eighth Pair, the intercostal Nerves, or from the recurrent Nerves: But the Trunks of these Nerves may, in their Course, be wounded, and thus the Effects which these Nerves perform to the Heart, may be abolished.

Willis, in *Anatome Cerebri*, tells us, that, upon dividing the Skin in the Throat of a live Dog, he applied a tight Ligature to both Trunks of the *Par Vagum*; after which, the Animal immediately became torpid, and swell'd, and suffer'd convulsive Motions, accompanied with a great Tremor about the *Hypochondria*. This Symptom soon ceasing, the Creature lay, as it were, at the Point of Death, vomiting up its Aliments; but it liv'd after these Nerves were entirely divided for several Days, till it was almost destroy'd for Hunger.

But, upon opening its Body, the Blood coagulated within the Ventricles of the Heart, and in the large Vessels, was found formed into grumous Concretions. In Animals, however, which perish by Hunger, such Coagulations of Blood are not found. The Cause why the Life of this Animal was so long protracted, was by *Willis* deduced from the small Ramifications of the recurrent and intercostal Nerves distributed to the Heart.

Lower, in *Tr. de Corde*, tells us, that upon making the same Experiment, he obsery'd, that the Heart began immediately to tremble and palpitate; and thus for a Day or two the Animal protracts a miserable Life, with a trembling Heart, and Sighs sent from his Breast: But so intense is the Pain of the Animal, that he cannot be confined, without very strong Ropes. But *Bhonius*, in his *Circulus Anatomico-physiologicus*, affirms, that an Animal which he treated in this manner expir'd in a Moment, by the Constriction of the Cords. *Vieussens*, in his *Neurographia*, tells us, that the Nerves of the eighth Pair, and those constituting the intercostal Pair, being transversly cut about the Neck, the Animal is forthwith seiz'd with a Languor, which is the Forerunner of approaching Death: He suffers tremulous Motions, his Strength gradually fails, and, in about twenty-four Hours he is deprived of Life. I made the same Experiment on a Dog, tying on each Side of the Neck, the eighth and intercostal Pairs: The Dog howl'd no more, but with a violent Effort utter'd a kind of obscure Noise: At certain Intervals he was seized with an intolerable Madness, biting every thing which came in his Way with incredible Rage; but before he was seiz'd with the Paroxysm of his Madness, the Point of his Nose began to be surprisingly corrugated. He liv'd in this Condition from Six in the Afternoon till Eleven at Night; but I found him dead next Morning.

From all these Circumstances it is obvious, that a Division of the cardiac Nerves in Animals, is succeeded by Death sooner

or later; and that the Animal almoſt immediately labours under, as it were, the Agonies of Death; which happens from the Inability of the Heart any longer to expel the Blood contain'd in its Cavities. But we obſerve that, in ſome Diſeaſes, Patients remain in ſuch Agonies for two Days, or longer, becauſe the Blood cannot be forced thro' the obſtructed Arteries. The ſame ſeems, alſo, to have happen'd in theſe Animals, which after theſe Nerves were ty'd or divided, protracted their Lives for a conſiderable time: Perhaps, alſo, other ſmall Nerves diſtributed thro' the Subſtance of the Heart, ſo long ſuſtain'd its vital Motion. Thus in *Hiſt. de l'Academie des Sciences, An.* 1734. we are told, that there was found a Ramification of a conſiderable Nerve, ariſing from the ſemilunar gangliform Plexus of *Vieuſſens*, near the large meſenteric Plexus, aſcending from the Abdomen to the Breaſt, and inſerted into the Right Auricle and Baſis of the Heart. Perhaps, alſo, the ſurpriſing Property of the Heart, by which, when divided from all the Veſſels, it continues its Motion, might continue Life after the cardiac Nerves were deſtroy'd.

Thus it is known from Experiments, what happens in Brutes in conſequence of a Diviſion of the cardiac Nerves; but in Men it rarely happens that the Trunks of the eighth Pair, or of the intercoſtal Nerves, are wounded, but, at the ſame time, the Soundneſs of the adjacent Veſſels is deſtroy'd, the wounding of which alone proves mortal: For the Trunks of the Carotids, and the large jugular Veins in the Neck, lie above theſe Nerves; and, behind, the lateral Proceſſes of the *Vertebræ* hinder them from being eaſily wounded. Nor do I remember, ſays *Van Swieten*, to have found, either among Phyſicians, or Surgeons, a ſingle Inſtance, in which the cardiac Nerves alone were wounded.

Secondly, Such as cauſe an Effuſion of Blood from the wounded Cavities of the Heart; for which Reaſon deep Wounds penetrating its Cavities, are mortal.

As the Heart is a Muſcle continually mov'd, and whoſe Parts ſo conſpire, and are united, that one cannot want the Aſſiſtance of the other; and as it is the Fountain of Life, whence all the animal Functions flow; ſo many of the antient *Greeks* and *Arabians* affirm'd, that Wounds of the Heart proved ſoon and infallibly mortal: But they ſeem to have aſſerted this rather from Theory, than from Experience.

There are ſome ſurpriſing Relations found in Authors, which, if true, would prove that Animals have liv'd without the Heart. Thus *Pliny* the Second, in *Lib.* 11. *Cap.* 37. tells us, that the firſt Day *Cæſar the Dictator* made a Proceſſion in his purple Robes, and ſat in a golden Chair, he twice found the Heart wanting in the Animals he ſacrificed. *Plutarch*, alſo, and *Suetonius*, in their Lives of *Cæſar*, affirm, that the Heart of the Sacrifice did not appear to him; which was look'd upon as a bad Omen; becauſe an Animal cannot naturally ſubſiſt without an Heart. But the Haruſpices often boldly impoſed on the Credulity of the Multitude, that they might at Pleaſure decree what was to be done. Hence theſe Teſtimonies are very ſuſpicious; ſince they are ſo directly repugnant to the known Oeconomy of Animals.

For it is hardly credible, that the Heart was ever wanting in an human Creature, or in any other Animal, tho' the Incautious might be deceiv'd by the great Variety of the Situation, Figure, and Bulk, of the Heart, ſometimes brought on by Diſeaſes, as is certain, from practical Obſervations.

The celebrated *Boerhaave*, in the Year 1720. had a ſurpriſing Obſervation communicated to him by a ſkilful Anatomiſt in *Edinburgh*, which proves that there may exiſt in Nature, ſuch Monſters as perplex the Knowledge of the Uſe of the Parts. This ſkilful Anatomiſt when carefully ſeaching for the ſeminal Veſſels, in a large, live, and robuſt Rat, found the Right Kidney double; but, upon opening the Membrane which cover'd it, the genuine Right Kidney appear'd; but the other Body, which he took for a Kidney, and which was included in its proper Covering, was of ſuch a Bulk and Figure as the Heart of that Animal uſually has, with its Baſe towards the ſuperior, and its Apex towards the inferior Parts. This Heart when carefully examined had two Ventricles, divided by a kind of Partition; there was, alſo, a Left Auricle, Valves, and fleſhy Columns; but there were not the leaſt Traces of the Right Auricle, the *Vena Cava*, the pulmonary Veins and Arteries, nor the Aorta. Upon opening the Thorax, neither *Pericardium*, nor Heart, appear'd; but from the *Vertebræ* of the Thorax, in the middle Space between the two Lobes of the Lungs, aroſe the Right Auricle, from which the pulmonary Arteries were diſtributed. The Veſſels which return the Blood from the Lungs were united into one Trunk, forming the Aorta, which was afterwards diſtributed in the uſual manner. The Animal was adult, and all the other *Viſcera* form'd in the natural manner: There was, indeed, an Heart, furniſh'd with the uſual Parts, but deviating from the natural Situation, and uſeleſs. Without the Action of the Heart, therefore, this Animal not only liv'd, but was ſound, and agile.

It is ſufficiently certain, from Experience, that ſome Animals have lived for ſome time after their Hearts have been cut out. *Galen*, in *Lib.* 2. *de Placitis Hippocrat. & Platon. Cap.* 4. tells us, that, in Sacrifices, the Victims, after their Hearts are taken out and laid on the Altar, reſpire, bellow ſtrongly, and even run till they die by the Effuſion of Blood. *Veſalius*, alſo, informs us, that he has ſeen Dogs, and eſpecially Cats, after their Thorax was laid open, and all the Veſſels of the Heart were conſtricted by a Ligature paſſed about the Baſe of the Heart, and the Heart itſelf was cut out below the Ligature, run a conſiderable Way, when the Cords, with which they were ty'd, were looſed. After the Hearts were taken out of Puppies cut from the Uterus of a live Bitch, their Life remain'd for a Quarter of an Hour with a ſenſible Motion of their Members, and a certain whizzing Noiſe. It is, alſo, certain, from Zoology, that Worms and other Animals of a ſimilar Species, have liv'd for a long time after their Hearts have been cut out; and after ſuch Animals are divided into Parts, each Segment retains Life for a conſiderable time. But from the Obſervations of *Malpighi* and *Lewenhoeck* it is certain, that Animals have, in their original State, liv'd the Life of Worms. Hence, perhaps, ſo long as theſe Animals remain in the Uterus, they retain ſomething of their antient Tenacity, or Toughneſs of Life. *Boyle* in his Treatiſe *de Utilitate Philoſophiæ Experimentalis*, tells us, that a Frog, after its Heart was cut out, leap'd about, ſwam when put into Water, and with Agility jumping out of the Veſſel full of Water, continued to leap about the Room for an Hour, and more.

Lord *Verulam*, in *Hiſt. Vitæ & Mortis*, tells us, that a certain Man, after the Executioner had cut out his Heart and held it in his Hand, was heard to utter three or four Words of Prayer; but that Author informs us, that the Criminal's Friends had given the Executioner a Reward for executing his Office quickly, and freeing the Malefactor from the racking Pains he would have otherwiſe been ſubjected to. Hence it is not very ſurpriſing, that, ſince the preternatural Cold a little conſtricted the divided Veſſels, and ſince in theſe laſt Moments of Life, the Diſpoſition of all the animal Organs was very intenſe, ſome Preſſure of the Blood ſhould as yet act for a few Moments on the Brain, by which Preſſure on the Organs thus diſpoſed, during that laſt Effort, the Criminal's Speech continued for a ſhort time; eſpecially if we conſider, that the Lungs, after the Aperture of the Thorax, being collapſed and every-where contracted by a preternatural cold Air, expel'd their contain'd Air with a pretty ſtrong Force. This Inſtance is not, therefore, repugnant to the Neceſſity of the Heart: But in the Experiment of *Veſalius*, where all the Veſſels were ty'd, the contractile Arteries, their Elaſticity being contracted by the cold Air, might force the Blood thro' the Brain and *Cerebellum*, and, conſequently, continue Life for a conſiderable time.

The Experiments made on Frogs, Vipers, and Tortoiſes, which evince that theſe Animals may live a conſiderable time after their Heart is taken out, demonſtrate, that the manner of Life in Animals cannot be limited by very general Rules, but that it is different in different Animals. So that it is not eaſy to give a general Hiſtory of Life, ſince we can only draw our Obſervations from Experiments made.

But no certain Obſervations have evinced that the Heart was ever wanting in human Creatures, or that they have, for a conſiderable time, ſurviv'd the total Deſtruction of its Fabric: Hence the Reaſon is obvious, why conſiderable Wounds of the Heart are juſtly look'd upon as mortal. It is, however, certain, that all Wounds of the Heart are not mortal; and that they differ much from each other, according to the different Parts of the Heart in which they are inflicted.

For if, by a Wound, the Trunk of the coronary Vein or Artery, in the Baſe of the Heart, is divided, a ſpeedy Death muſt inevitably follow; becauſe, by a great Impetus, which is the ſtrong Contraction of the Aorta, the Blood, which ſoon returns by the Veins, is, thro' the coronary Artery, tranſpreſs'd thro' the muſcular Subſtance of the Heart; for at every Contraction of the Heart, the whole Heart becomes pale, becauſe all the Blood is expreſſed: But the Moment after, when the Heart is in its Diaſtole, all the Veſſels, running thro' its Subſtance, are fill'd.

But if a Wound has penetrated into the Right Ventricle of the Heart, the Blood will be diſcharg'd into the *Pericardium*, partly from the wounded Veſſels of the Subſtance of the Heart, and partly from the Cavity of the Heart; and from the *Pericardium* it will be diſcharg'd into the Cavity of the Thorax, or flow from the external Wound: Such a Wound will be dilated, when the Heart is full; for at the time the Heart is conſtricted, the wounded Parts rather accede to each other: Nor, at that time, will there be a great Effuſion of Blood. When the

Blood, however, is diſcharg'd, the Strength will be impair'd, tho' the Action of the Heart and Life ſtill remain: But when the greateſt Weakneſs is preſent, the Heart is almoſt at reſt: If, at this time, there is no muſcular Motion, the venous Blood will flow into the Heart with a calm Motion, and in a ſmall Quantity. And if, in this Caſe, the Patient abſtains from ſuch Things as, by Nutrition, ſuddenly augment the Quantity of the Blood, and from Cordials which, by their ſtimulating Quality, always augment the Motion of the Fluids, it ſeems poſſible to preſerve Life, and reſtore Health. For unleſs the Matter was confirm'd by practical Obſervations, in wounded Perſons, and Women who have ſuffer'd Abortion, no one could believe with how ſmall a Quantity of Blood, and how ſlow a Degree of its Circulation, a Man can live. Thus when, by a violent Hæmorrhage, the Quantity of Blood is greatly diminiſh'd, and the Strength impair'd, the Wound inflicted is hardly any more dilated, the Rudiments of a Concretion begin to be form'd, and gradually perfected, provided, by an increas'd Quantity and Motion of the Blood, thoſe Parts are not broken which had begun to be concreted.

Beſides, in Wounds of the Right Ventricle of the Heart it is to be obſerv'd, that the Lungs continue to act, and, by their Dilatation, prepare an eaſy Way for the Blood forced from the Right Ventricle of the Heart. Hence, in the time of the Syſtole, on account of the free Paſſage thro' the Lungs, ſuch a Quantity of Blood will not be expreſs'd thro' the Wound. Hence ariſes a greater Opportunity of conſolidating the Wound.

But Wounds of the Left Ventricle of the Heart ſeem to be far more dangerous; for if the Left Ventricle of the Heart is wounded, and not entirely perforated, ſuch a Wound muſt neceſſarily be dilacerated, ſince the Left Ventricle of the Heart, by its ſtrong muſcular Force, in which it far ſurpaſſes the Right, preſſes its contain'd Blood into the Aorta, which makes a conſiderable Reſiſtance, and dilates not only that, but all its Ramifications, throghout the whole Body: For the Fibres of the Left Ventricle of the Heart, being then diſtracted by the contain'd and reſiſting Blood, the Wound will be increas'd, till, penetrating into the Cavity of the Heart, it prepares a more eaſy Diſcharge for the Blood than thro' the Aorta, where there is a conſiderable Reſiſtance: Or, if any Conſolidation is begun here, it is to be fear'd, leſt the Part being preternaturally weak, ſhould be extended into an aneuryſmatic Tumor, and the Action of the Heart be, by that means, diſturb'd; ſo that Life may indeed be protracted, tho' with a Train of Miſeries, which can only be terminated by Death.

But if the Left Ventricle of the Heart is perforated with a large Wound, a ſpeedy Death infallibly enſues: But in all Probability, that Wound would, of all others, prove moſt ſuddenly mortal, which ſhould divide the Beginning of the Aorta immediately above its Valves. But when the Left Ventricle of the Heart is perforated, the Valves of the Aorta ſuſtain the Blood contain'd in the Arteries. Hence the whole arterial Syſtem remains full, after which, the Arteries, being contracted, propel the Blood; and thus Life may be ſuſtain'd, for ſome time.

Medicinal Obſervations have evinced, that, after Wounds of the Heart, Men have liv'd for a conſiderable time, eſpecially when only the Right Ventricle is perforated: Beſides, ſome Obſervations evince, that a Conſolidation of Wounds of the Heart is poſſible; Inſtances of which are found in *Thom. Barthol. Hiſt. Anatom. rarior. Cent.* 1. *Hiſt.* 77. *Schenckius, Obſervat. Med. rarior. Paré, Lib.* 10. *Cap.* 32. *Act. Leipſ. An.* 1705. and *Miſcellan. Cur. Dec.* 2. *An.* 6.

From all the Inſtances recorded in theſe Authors, we may conclude, that though Wounds of the Heart are always dangerous, yet they are not at all Times ſuddenly and infallibly mortal: It is, alſo, certain, that we ought not to deſpair in the moſt deſperate Wounds, ſince, whilſt a weak and languid Life is only ſuſtain'd, ſuch Conſolidations of Wounds frequently happen, as could not have been expected.

Thirdly, Thoſe Wounds which derive the Blood from the Heart, Brain, and *Cerebellum*, either into ſome Cavity of the Body, or out of the Body, and which cannot be cur'd on account of the Situation of the Places; ſuch as large Wounds of the Lungs, Liver, Spleen, Kidneys, Pancreas, Meſentery, Stomach, Inteſtines, Uterus in pregnant Women, Bladder about its large Arteries, the Aorta, Carotid, Vertebral, and the like Arteries and Veins.

In the preceding Numbers of this Aphoriſm we have ſhewn, that thoſe Wounds are mortal which deſtroy the Fabric of the *Cerebellum*, or which, by wounding the *Medulla Oblongata*, or the ſpinal Marrow near its Origin, or the cardiac Nerves, hinder the vital Influx of the Spirits ſecreted from the Blood by the Fabric of the *Cerebellum* into the Heart, and other Parts of the Body, from performing the Functions requiſite for Life: But that theſe vital Spirits may be ſeparated by the Fabric of the *Cerebellum*, it is requiſite that the Blood ſhould, by the muſcular Force of the Heart, be forced into the Arteries. Hence deep Wounds, penetrating into the Cavities of the Heart, are judg'd mortal. The whole Action of the Heart conſiſts in receiving the Blood convey'd thro' the Veins, and propelling it into the Arteries, after it is receiv'd: All Wounds, therefore, which ſo injure the Veſſels which convey the Blood to the Heart, or receive the Blood expel'd from the Heart, in ſuch a manner that the Blood flows out of the Body thro' the open Wound, or is extravaſated and accumulated in the Cavities of the Body, without returning again to the Heart prevent it from being convey'd in a due Quantity, and with a proper Impetus, thro' the Arteries of the Brain: Hence all the Functions of the Brain and *Cerebellum* muſt neceſſarily be diſturb'd, and at laſt totally aboliſh'd. Nor is it of any Importance, whether the Veſſels are wounded in their Courſe, before they are diſpers'd thro' the Viſcera, whoſe Fabric they conſtitute; or whether they are wounded in the Viſcera with the like Effect, that is, ſuch a conſiderable Effuſion of the vital Blood as injures the Action of the Heart and *Cerebellum*. All the Wounds, therefore, of the Viſcera, and Veſſels enumerated in this Aphoriſm, are not abſolutely mortal, unleſs under this Limitation: Beſides, it is requiſite that the Condition of the Wound made be ſuch, that the Effuſion of the Blood cannot be ſtop'd by Ligature, or the other Aſſiſtances of Art. Among the Wounds of this Kind are reckon'd, firſt,

Large Wounds of the Lungs.

The Right Ventricle of the Heart receives all the Blood of the Body convey'd thro' the Veins, and propels it thro' the Lungs into the Left Ventricle: When, therefore, a large Wound is made in the Lungs, the Blood forc'd from the adjacent Heart will be diſcharg'd from the divided Veſſels, and, conſequently, will not return to the Left Ventricle of the Heart, but flow thro' the Wound made; or paſſing into the aereal Cavity of the Lungs, it will be vomited up copiouſly; or, being extravaſated into the Cavity of the Breaſt, it will hinder the free Expanſion of the Lungs. Hence the mortal Effects of ſuch Wounds are ſufficiently obvious.

Medicinal Obſervations ſufficiently evince the fatal Events of Wounds of the Lungs; Inſtances of which may be ſeen in *Bohnius de Renunciatione Vulnerum*. In practical Authors, Inſtances, alſo, occur, in which Wounds of the Lungs have been cur'd; but theſe Wounds have either been very ſlight, or ſuch as that the Surgeon's Hand could have Acceſs to them. See *Hildanus, Cent.* 2. *Obſ.* 32. and *Cent.* 1. *Obſ.* 46. It is, alſo, to be dreaded, that even ſlight Wounds of the Lungs may degenerate into Ulcers, which afterwards waſte the Patient, by a ſlow Conſumption. An Inſtance of this occurs in *Foreſtus, Obſ. Chirurg. Lib.* 6. *Obſ.* 4.

As for large Wounds of the Liver; the collected venous Blood of the abdominal Viſcera is, by means of the *Vena Portæ*, convey'd thro' the Liver, and the Trunk of the *Vena Cava Aſcendens* is inſerted into the Liver, the Whole of which appears ſoft, and reſembles a Sponge full of Blood. The hepatic Arteries, indeed, when compar'd with the great Bulk of the Liver, are very ſmall; but conſiderable Ramifications of the *Vena Portæ* are diſtributed thro' the Liver. Hence it appears, that Wounds of the Liver are always very dangerous, and, if conſiderable Ramifications of the Veſſels, diſtributed thro' the Liver, are wounded, always mortal, and that, for the moſt Part, very ſuddenly; becauſe a large Quantity of Blood is diſcharg'd into the Cavity of the Abdomen, and thro' the Wound. Hence *Deliquiums* and Death ſoon ſucceed. See *Hippocrat. Epidem.* 7. But it is ſufficiently obvious, that thoſe Wounds of the Liver are moſt dangerous, which are inflicted about the *Porta*, which are, for that Reaſon, pronounced incurable, by *Celſus*, in *Lib.* 5. *Cap.* 26. But the Wounds made in the thick Part of the Liver he aſſerts to be cured with Difficulty, though they are not abſolutely incurable. *Hildanus*, in *Cent.* 2. *Obſ.* 34. gives us a memorable Inſtance of the Cure of a Wound in the Liver; but, from the Deſcription that Author gives, it appears, that the Wound did not penetrate to the large Ramifications of the hepatic Veſſels. Tho' ſlight Wounds of the Liver are not forthwith mortal, yet they generally prove fatal at laſt, See *Tulpius, Obſervat. Medic. Lib.* 2. *Cap.* 26.

As for large Wounds of the Spleen; tho' *Democritus*, in *Epiſt. ad Hippocrat. de Natur. Human.* affirm'd, that the Spleen, which lies oppoſite to the Liver, was not only an uſeleſs, but, alſo, an hurtful Part of the Body; tho', by Experiments made on live Animals, it is certain, that the Spleen may be cut out, without deſtroying Life, or even greatly diſturbing Health; and tho' Mr. *Boyle*, in his Treatiſe of the Uſefulneſs of experimental Philoſophy, tells us, that this has been done in Men, yet the Blood-veſſels of the Spleen are ſo large, and ſo near the Heart, that mortal Hæmorrhages are juſtly to be dreaded after Wounds of the Spleen: Inſtances in which Wounds of this Organ have

prov'd mortal, may be seen in *Tulpius, Obſ. Medic. Lib.* 2. *Cap.* 29. and *Bohnius, de Renunciatione Vulnerum.*

But ſlight Wounds of the Spleen, as well as of the Liver, are not always abſolutely mortal, tho' it is highly probable that they are always very dangerous.

As for large Wounds of the Kidneys; *Celſus*, in *Lib.* 5. *Cap.* 26. affirms, that Patients, who have their Kidneys wounded, cannot be preſerv'd. The Perſon who conſiders the Largeneſs of the emulgent Arteries, will eaſily believe that a mortal Hæmorrhage may enſue, if the large Ramifications of theſe Arteries are divided, either in the Subſtance of the Kidneys, or at their Ingreſs into the Kidneys: And if, at the ſame time, the *Peritonæum* is wounded, the Blood will be diſcharg'd into the Cavity of the Abdomen; but if a Wound, inflicted in the poſterior Part of the Body, wounds the Kidneys, whilſt the *Peritonæum* remains entire, there will be a great Effuſion of Blood into the pinguedinous Coat lodg'd in the Interſtices of the Muſcles: Nor can the Blood flow ſo freely from the Wound in the Kidneys; nor is this Doctrine deſtroy'd by that Paſſage of *Hippocrates, de Intern. Affection. Cap.* 15. where he orders Section for the Stone in the Kidneys, in the following manner: "When "the Pain is exceſſive, waſh the Part aggriev'd with a large "Quantity of warm Water, and apply tepid Fomentations; "but when it becomes tumid, and protuberant, make an Inci-"ſion hard by the Kidney [κατὰ τὸν νεφρὸν], and, having ex-"tracted the Pus, carry off the Sand by diuretic Medicines." For it is ſufficiently obvious, that, in this Paſſage, he does not mean that an Inciſion ſhould be made in the Kidney, and the Sand evacuated by that means.

That all Wounds of the Kidneys, however, are not mortal, may be ſeen in *Foreſtus, Lib.* 25. *Obſ.* 20.

As for large Wounds of the Pancreas; if the Trunks, or large Ramifications of the Veſſels running thro' the Pancreas, are divided, the Blood being diſcharg'd into the Cavity of the Abdomen, and becoming afterwards corrupted, the Effect of ſuch a Wound may be Death: But as the Pancreas lies under the Stomach, it can rarely be wounded, but the Wound muſt, at the ſame time, paſs thro' ſome of the other Viſcera.

As for large Wounds of the Meſentery; how large the Blood-veſſels, running thro' the Meſentery, are, and in what Order they are placed, *Euſtachius*, in *Tab.* XXVII. *Fig.* 2, and 3. has beautifully demonſtrated. Beſides conſiderable Ramifications of the *Vena Portæ* and *Vena Cava*, large arterial Trunks, that is, the ſuperior and inferior meſenteric Arteries, are, alſo, convey'd thro' the Meſentery. When, therefore, theſe Veſſels are divided, by a wounding Cauſe, a mortal Hæmorrhage may enſue, and the Cavity of the Abdomen be fill'd with the extravaſated Blood. An Inſtance of this is found in *Bohnius, de Renunciatione Vulnerum*: *Ruyſch*, alſo, in *Adverſar. Anatom. Decad.* 2. N° 4. tells us, that Death follow'd a Rupture of the Veſſels of the *Omentum*, whilſt the whole Cavity of the Abdomen was fill'd with the Hæmorrhage. There is ſtill another Danger attending Wounds of the Meſentery, which ſeems firſt to have been adverted to by *Ruyſch*: For that Anatomiſt, being for more than fifty Years employ'd, in *Amſterdam*, in inſpecting the Bodies of thoſe who were taken off by a violent Death, in order to make a Report to the Judges, with reſpect to the Condition of the Wounds, ſays, that he has frequently obſerv'd, that Wounds of the Meſentery prov'd mortal in two or three Days after the Patients had been rack'd with the moſt exquiſite Pains: But, upon a careful Inſpection, it was certain, that no other Part, of any Moment, was wounded. Beſides, when Poulterers caſtrate Capons, if they ſee the Meſentery wounded, in the Operation, they immediately kill the Animal; becauſe they know, from Experience, that it will ſoon die by ſuch a Wound. The mortal Effect of ſuch Wounds ſeems to depend on the wounding of the Nerves of the Meſentery. How great Influence the Nerves, diſpers'd thro' the abdominal Viſcera, have on the vital Functions of the human Body, is ſufficiently obvious, from medicinal Obſervations in incarcerated Hernias, and Interceptions of the Inteſtines.

Perhaps ſomething like this is hinted at by *Hippocrates*, in his *Coacæ Prænotiones*, when he tells us, "That thoſe whoſe inte-"rior Nerves, whether ſmall or large, are wounded, die, if the "Wound is tranſverſe, and large; tho' ſome eſcape, when it is "ſmall, and ſtrait." *Cornarius*, inſtead of ὁτι ἐς τὰ ἐντὲς, reads ὁτι ἐς τὰ ὑστερα; which Reading approaches near to this Opinion.

As for large Wounds of the Stomach and Inteſtines; we here conſider ſuch Wounds of theſe Parts as may, by a Rupture of their Blood-veſſels, prove mortal, in conſequence of the Effuſion of Blood. For thoſe Misfortunes, which ſucceed an Evacuation of the Contents of the Stomach and Inteſtines thro' the Wound, are treated of under the Article ABDOMEN. The Stomach, then, is ſurrounded by pretty large Veſſels, which, about both its Orifices, deſcend towards its Bottom, and are, in their Courſe, by frequent Anaſtomoſes, join'd to ſimilar Veſſels riſing upwards from the Bottom of the Stomach. Hence, when a conſiderable Ramification is divided, the Blood contain'd in all the other Veſſels of the Stomach, will eaſily flow thro' the wounded Veſſel. In practical Authors there are many Inſtances of Death ſucceeding Wounds of the Stomach; a memorable one of which accompanied with an exceſſive Hæmorrhage, is found in *Bonetus, Sepulchretum Anatomicum, Tom.* 3.

But the Inteſtines annex'd to the Meſentery, by its means receive their Veſſels, which being applied on both Sides to the inteſtinal Canal, are, in that Part of the Inteſtines which is oppoſite to the Meſentery, mutually join'd, by Anaſtomoſes. Wounds, therefore, of the Inteſtines, eſpecially about the Meſentery, may divide pretty large Trunks of Veſſels; by which means, large Effuſions of Blood into the Cavity of the Abdomen, and Death, will happen. See *Bonetus Sepulchretum Anatomicum, Tom.* 3.

The Danger of Wounds in the large Veſſels of the Stomach and Inteſtines, is much augmented by the continual periſtaltic Motion of theſe Viſcera; in conſequence of which, ſuch Wounds are never in a State of Reſt: Perhaps, alſo, the like Misfortunes are produc'd by Wounds of the Nerves diſpers'd thro' the Stomach, with thoſe ſucceeding Wounds of the Meſentery.

In practical Authors, however, there are frequent Inſtances of Wounds of the Stomach and Inteſtines cur'd; ſo that all ſuch Wounds are not to be look'd upon as mortal.

As for Wounds of the Uterus in pregnant Women; the Uterus, after a Woman has conceiv'd, and the impregnated Egg, by its increas'd Bulk, begins to fill the Cavity of the Uterus, is extended every Way, and in the like Proportion; all its Veſſels are every way enlarg'd, and receive a greater Quantity of Humours. Hence the Uterus of a pregnant Woman is almoſt as thick as the Uterus, when contracted, in a Woman not pregnant; and yet it is diſtended to an incredible Bulk, by the Dilatation and Repletion of its Veſſels. Hence *Hippocrates*, in *Lib. de Mulier. Morb. Lib.* 1. *Cap.* 23. tells us, "That when a "Woman is pregnant, the Blood is gradually convey'd from "the whole Body to the Uterus, and enlarges it." And hence he deduces the Reaſon why the Colour of pregnant Women is deprav'd; which is, that the pure Blood is daily convey'd from the Body of the Mother to that of the Fœtus. Hence it appears, that Wounds of the Uterus, when impregnated, are very dangerous; becauſe its Veſſels are diſtended by ſo large a Quantity of Blood. And this Danger is increas'd by the Fœtus, which, diſtending the Uterus, hinders it from contracting itſelf, and its Veſſels. But if, immediately after a Wound inflicted in the Uterus, the Fœtus was ſuddenly excluded, there would be ſome Hopes that, in conſequence of the Contraction of the Uterus, the Hæmorrhage might be ſtop'd, and the Wound conſolidated; as it actually happens in the Cæſarean Operation. Inſtances of this may be ſeen in *Act. Lipſ. An.* 1693. and *Hiſt. de l'Acad. Royal. des Sciences, An.* 1731.

As for Wounds of the Bladder, about its larger Arteries; tho' *Hippocrates*, in his *Tr. de Morbis, Lib.* 1. *Cap.* 3. condemn'd Wounds of the Bladder as mortal, and affirms, that they could not be conſolidated; yet it is certain, from frequent and undeniable Experiments, that, in Cutting for the Stone, Wounds of the Bladder are happily and ſucceſsfully cur'd: Yet there is a Danger, leſt the large Veſſels running thro' the Bladder, being divided, produce an exceſſive Hæmorrhage. For the Veſſels ariſing from the large adjacent Trunks of the Iliac Arteries diſcharge the Blood with a violent Impetus. The Origin and Courſe of theſe Veſſels are found in *Euſtachius, Tab.* XII. *Fig.* 1. This Danger is increas'd, becauſe in thoſe afflicted with the Stone, the Bladder is often thicker, and its Veſſels more dilated, than in a natural State: But when theſe Veſſels are divided, the Bladder, ſo long as the Stone remains in its Cavity, cannot totally contract itſelf; for which Reaſon they continue to diſcharge the Blood. But when the Stone is extracted, the Bladder contracted, and the Urine freely diſcharg'd thro' the Wound, the divided Veſſels may be again clos'd.

As for Wounds of the Aorta; the Blood returning from the Lungs to the Left Ventricle of the Heart, is all forc'd into the largeſt arterial Veſſel of the whole Body, which is call'd the *Aorta*, which being incurvated, tends downwards, and being incumbent on the Spine, and declining a little to the Left Side, as far as the *Os Sacrum*, is there divided into two equal Ramifications call'd the Iliac Arteries. During the whole of its Courſe from the Heart to the Part where it is divided, it retains the Name of the *Aorta*: Now it is ſufficiently obvious, that when the Aorta itſelf is wounded, there are no Hopes of a Cure left, ſince, with a direct Impetus, it receives all the Blood from the Left Ventricle of the Heart, and there is no Acceſs to the Hands of the Surgeon; for it lies conceal'd in the internal Parts of the Body incumbent on the *Vertebræ*: But then a Wound will prove the ſooner mortal, the nearer it is to the Heart.

As for Wounds of the Carotids; these Arteries arise from the Curvature of the Aorta, which draws its Origin from the Left Ventricle of the Heart. This is at least the Case with the Left Carotid Artery, though for the most part, the Right arises from the Subclavian Artery of the same Side. These two Arteries on each Side of the Aspera Arteria, run down to the Larynx, where each of them is divided into two Ramifications, one of which lying principally towards the external Parts of the Head, is called the *external Carotid*, and the other which enters the Cranium, and is distributed through the Brain, is called the *internal Carotid*. Through their whole Course from their Origin out of the Aorta, or Subclavian Artery, to that Place where they are divided into two Ramifications, they are called simply the *Carotids*. In Mankind these Arteries are almost as large as the little Finger: Hence a large Hæmorrhage must necessarily happen when they are wounded, since being so near the Heart, they receive the Blood propel'd from it with a great Impetus. It is true the Carotids, during this whole Course, are so near the external Integuments of the Body, that their Pulsation in the Neck may be easily perceived by the Finger. Besides, it is probable, that a Ligature may be safely applied to one of the Carotids, since a sufficient Quantity of Blood may be conveyed to the Head, by the means of the other, and the vertebral Arteries. In a Dog whose recurrent Nerves I had cut off eight Days before, I tied both Carotids, nor could I observe any Inconvenience produced by that means; for eight Days after I found the Animal brisk and lively. Then I tied the Jugular Veins without any observable Disadvantage to the Animal, and four Days after found him entirely in Health. But examining the Ligatures applied to the Carotids, I found them firm, and a thick compact Thrombus lodged between the Ligature and the Heart. Upon laying open the Brain I found no Change in it, but its Bulk appeared rather increased than diminished.

But if we consider the Difficulties which occur when the Carotid Artery is divided in a Man, it will appear, that such a Wound is justly to be called *mortal*; for an excessive Hæmorrhage may in a few Minutes put an End to the Patient's Life. But that such a Patient should be preserved, it would be requisite that a skilful Surgeon should be present the Moment the Wound is inflicted, in order to compress with his Fingers, against the resisting Aspera Arteria, both Extremities of the divided Carotid. Ligatures ought, also, to be applied to the Limbs, that thus the Veins being compressed, a smaller Quantity of Blood may return to the Heart, by which means the Impetus of the discharged Blood must be lessened. After these Measures are taken, both Extremities of the divided Carotid, are to be found out and tied; for it is not sufficient to tie that Part of the Artery which is next to the Heart, since the Blood would continue to flow through the other Extremity of the divided Artery, because the Carotids under the Basis of the Brain, are joined with each other, and with the Vertebral Arteries by pretty large Ramifications. From all these Circumstances it is obvious, that one Surgeon, tho' ever so dexterous, is not sufficient for Wounds of this Kind; but that two at least are absolutely requisite. Besides it is not probable, that the Extremities of the divided Artery can be found, without rendering the Wound larger by a Division of the Integuments. Hence the subsequent Death of the Patient would be imputed to the Surgeon, though he had acted with ever so much Care and Skill in the Discharge of his Office: But if the Patient should lose so much Blood, that falling into a Deliquium the Hæmorrhage should cease, such a Method may be tried.

As for Wounds of the Vertebral Arteries; the Vertebral Arteries arising from the Subclavian Arteries run on both Sides through the Perforations of the transverse Processes of the Vertebræ of the Neck towards the Cranium. In this Course they send off small Ramifications through the Joinings of the Vertebræ to the Spinal Marrow, and its Coverings; as, also, to the adjacent Muscles. When, therefore, these Arteries are divided, they cannot easily retract themselves and close their Orifices; and, as by their Ramifications sent off under the Basis of the Cranium, they communicate with the internal Carotids, hence the Blood convey'd through the Carotids, may be discharged from these Arteries when wounded. Hence it is obvious, that Wounds of them are exceedingly dangerous. In this Case there is no Opportunity of tying these Arteries when wounded, since their divided Extremities are concealed within these bony Perforations. The only Hope would be, if the Patient being extremely weakened by an Hæmorrhage, and a languid Life still remaining, the Extremities of the divided Artery could be consolidated by a small Quantity of mild and proper Aliment, without the Exhibition of Cardiacs. But that this is not absolutely impossible, is certain, from the Cures produced in Wounds of the Heart, and from a memorable Instance, in which the Patient lived after the Division of the Subaxillary Artery.

Now it is sufficiently obvious, that the same Danger attends Wounds of other large Arteries, such as the Emulgents or Iliacs, for Instance.

It is, also, certain, that Wounds of the large Vein are mortal, for the same Causes; but as most of the Veins lying near the Surface of the Body, may be more easily compressed, and as the Velocity of the Blood is not so great in the Veins as in the Arteries, hence it is obvious, that all other Circumstances being considered, Wounds of the Veins are not so dangerous as those of the Arteries.

4thly, Those Wounds which absolutely prevent Respiration: Such as a Division of the Larynx, with a Retraction of the divided Parts; large Wounds of the Bronchia, broad Wounds which perforate both Cavities of the Thorax, and admit the external Air, and Wounds which penetrate the Diaphragm on both Sides of the Mediastinum, or which affect its nervous Parts.

In a Man, after it is brought into the World, that the Blood may pass from the Right to the Left Ventricle of the Heart, it is requisite that the Lungs dilated by the inspired Air, should make way for the Blood forced from the Right Ventricle through the Pulmonary Artery, into the Pulmonary Veins, and thence into the Left Ventricle of the Heart. Respiration is therefore so necessary to Life, that if it is destroyed but for a few Minutes, Life ceases. But in order to Respiration it is necessary the Air should freely enter and expand the Lungs. All Wounds, therefore, which hinder the Ingress of the Air into the Lungs, or their Dilatation by the Air are mortal: Of this Kind are the following:

A Division of the Larynx accompanied with a Retraction of the divided Parts: The Aspera Arteria consisting of cartilaginous Segments, being always open, and never capable of collapsing, nor of being easily compressed, preserves a free Passage for the Air into the Lungs. When, therefore, a Wound so divides this aerial Pipe, that the inferior divided Extremity shrinks back and conceals itself in the adjacent Parts in such a manner as not to admit the Air, the Patient's Life is gone. But if notwithstanding a very large Wound, a free Passage is preserved for the Air into the Lungs, such a Wound will not be mortal, as we find from inconteslable Proofs. Frequent Instances occur to Physicians and Surgeons, in which Persons wearied of Life, have laid violent Hands on themselves in such a manner as to divide the Aspera Arteria, as, also, of Persons who have suffered that Misfortune by Robbers, who have nevertheless been afterwards totally cured. Instances of this Kind are found in *Tulpius*, *Observat. Med. Lib.* 1. *Cap.* 50. *Thom. Bartholin. Histor. Med. Cent.* 5. *Hist.* 89. and *Paré* in *Lib.* 10. *Cap.* 31.

As for large Wounds of the Bronchia; after the Aspera Arteria descends through the anterior Part of the Neck into the Thorax, about that Part where the Aorta, arising from the Heart, is incurvated, it is divided into two Ramifications, each of which is distributed to the Lobe of the Lungs on its respective Side. Then these Ramifications losing the Name of the *Aspera Arteria*, are called the *Bronchia*; and the Subdivisions of these Ramifications made in the Lungs, also, retain that Name. Since, then, the Office of the Aspera Arteria, and Bronchia, is to distribute the inspired Air through the aerial Cavities of the Lungs, the Air making its Way through large Wounds of these will be accumulated in the Cavity of the Thorax, and this Air being expanded by the Heat of the Place, will compress the Lungs, and by that means hinder the Whole of their Action. Hence ensue Suffocation and Death; especially if the Bronchia on both Sides are so wounded; for in this Case Respiration is totally destroyed. Hence *Hippocrates*, in *Coac. Prænot.* 509. tells us, "That the Patient dies, who "having large Wounds so inflicted in the Aspera Arteria and "Lungs, that in consequence of the Wound of the Lungs, less "Breath is discharged by the Mouth than by the Wound." But the Danger of such Wounds is increased, because the Bronchia hardly seem capable of being hurt without dividing the Blood-vessels accompanying the bronchial Ramifications.

As for broad Wounds penetrating into both Cavities of the Thorax, and making Way for an Admission of the Air; for as the Lungs are every-where contained in the Thorax exactly closed, they are always more distended than if they were everywhere exposed to the free Air; for in this last Case they collapse, and are contracted into a smaller Space, especially by the contractile Action of the muscular Fibres, which connect the Segments of the Bronchia with each other; for in a natural State there is no Air between the Pleura and the Lungs; but a free Access of that Fluid into the Lungs is left through the Glottis. Hence the Lungs are more dilated by the Air which enters by the Aperture of the Glottis, than they are compressed

compreſſed by the external Air acting on the Ribs and Diaphragm, becauſe the arched Figure of the Ribs, and the Connection of the Diaphragm with the Ribs and Vertebræ, hinder the external Air from preſſing the Diaphragm too far into the Cavity of the Breaſt, that thus there might be a proper Balance or Equilibrium, between the external Air, and that contained in the Lungs. This is the Reaſon why the Lungs always remain contiguous to the Pleura, even after Death, ſo long as the Thorax remains entire and cloſe, as is ſufficiently obvious, when, without wounding the Pleura, the Intercoſtal Muſcles are cautiouſly ſeparated; for in this Caſe the Lungs appear contiguous to the Pleura, which on account of its Thinneſs, is generally pellucid: But when the Pleura is perforated, and the Air admitted into the Cavity of the Breaſt, the Lungs collapſe, are immediately contracted into a ſmaller Space, and recede from the Contiguity of the Pleura. The Diaphragm before concave towards the Abdomen, highly tenſe, and thruſt into the Cavity of the Breaſt, immediately becomes flaccid, and ſinks downwards. From theſe things it is ſufficiently obvious, that in a natural State the Lungs are every-where contiguous to the Pleura, and that no Air is lodged between the convex Surface of the Lungs, and the Cavity of the Pleura. Whilſt therefore by Muſcles ſubſervient to that Purpoſe, the Ribs are elevated, and ſeparated from each other, the Diaphragm contracted, and rendered plain, and conſequently the Cavity of the Thorax enlarged, there would be a Space free from Air between the Pleura and the Surface of the Lungs. But the Air entering freely through the Glottis, ſo diſtends the Lungs, when the Breaſt is dilated, that they always remain contiguous to the Pleura, and thus Inſpiration is performed. But when, in conſequence of a Perforation of the Cavity of the Thorax, there is a free Acceſs of the Air into that Cavity, the Preſſure of the Air, which entered by the Glottis, is balanced; hence the Lungs will not be diſtended, but by their proper Contractility take up a ſmaller Space than before. If this happens in both Cavities of the Breaſt at one time, both the collapſed Lobes of the Lungs cannot be dilated by the inſpired Air; hence the Right Ventricle of the Heart cannot force its Blood through the collapſed Lungs. Thus the Motion of the Heart will ſoon be ſuffocated, and Life, which depends upon it, deſtroy'd.

This Doctrine has been ſufficiently confirmed by numberleſs Experiments upon Dogs, and other Animals, made both by the Antients and the Moderns; particularly if the Orifices of the Wounds were larger than the Aperture of the *Glottis*: Though in caſe of ſmaller Wounds penetrating both Sides of the Thorax, Anima's have been known to live ſome time.

As for Wounds penetrating the Diaphragm on both Sides of the Mediaſtinum; the Pleura lines both Cavities of the Thorax, but in ſuch a manner, that each Cavity has its proper Membrane. The Cavities of the Thorax may therefore be conceived to be formed by the two Pleuras, reſembling hollow Bladders, adjacent to each other, and adhering in the Place of Contact. The Duplicature of theſe two Membranes is called the *Mediaſtinum*, which divides the Cavity of the Thorax into two, but in ſuch a manner, that the anterior Part inclines to the Left; for which Reaſon the Right Cavity of the Breaſt is larger than that of the Left, as is ſhewn in *Memoires de l'Acad. Royale des Sciences, l'An.* 1715. Since therefore the Mediaſtinum is not a ſimple Membrane, but formed of the two Bags of the Pleura adhering to each other, *Galen*, in *Tr. de Anat. Admin. Lib.* 7. *Cap.* 2. when deſcribing the Membrane lining the Thorax, juſtly enough aſſerts, that of it are formed the Membranes dividing the Thorax [*ὑμένες διαφράττοντες τὸν θώρακα*]. Now if a Wound is inflicted in the Diaphragm on each Side of the Mediaſtinum, the Air may by theſe Apertures enter the Cavity of the Thorax, and by that means hinder the Expanſion of the Lungs, as we have already obſerved with reſpect to Wounds penetrating both Cavities of the Thorax.

But if we conſider that the Liver and Spleen are ſituated near the Diaphragm, it is ſufficiently obvious, that the Diaphragm can hardly be hurt in two diſtinct Places, without theſe Viſcera being wounded. Hence Death ſucceeding ſuch a Wound, cannot be aſcribed alone to the Admiſſion of the Air into the Cavities of the Thorax; for beſides, theſe Viſcera being preſſed upon by the Action of the Diaphragm and abdominal Muſcles, will block up the free Paſſage made to the Air by theſe Wounds. But ſuch Wounds muſt farther be very large; hence ſuch a Caſe ſeems rarely or never to happen.

As for Wounds dividing the nervous Part of the Diaphragm; the Middle of the Diaphragm is called its *tendinous Centre*, which is a pretty broad tendinous Space, or Aponeuroſis, in which all the fleſhy Fibres of the Diaphragm meet. It was formerly called the *nervous Part of the Diaphragm*, becauſe the Antients called Tendons *Nerves*. It was for a long time believed, that by the Action of the fleſhy Fibres of the Diaphragm, this tendinous Centre was every-where drawn downwards, and conſequently that if a Wound ſhould be inflicted in this Part, every time the Diaphragm acts, the half-lacerated Fibres would be diſtracted, the Wound be augmented, and the Pain become ſo intolerable as to produce Convulſions and Death. But the celebrated M. *Senac*, in *Mem. de l'Acad. Royale des Sciences, l'An.* 1724. has demonſtrated, that the Middle tendinous Part of the Diaphragm, on which the Heart included in its Pericardium is incumbent, does not deſcend in Inſpiration, ſince the Motion and Situation of theſe would by this means be greatly diſturbed, becauſe the Pericardium with a pretty broad Surface adheres to this tendinous Part of the Diaphragm. This is, alſo, proved by the Structure of the Diaphragm, and its Connection with other Parts.

Wounds of the Diaphragm are ſucceeded by another Misfortune no leſs fatal, though not productive of ſo ſudden Death, after the Patient has ſuffered the moſt exquiſite Torments. And this happens when the Parts contained in the Cavity of the Abdomen are, by the Action of the Diaphragm and abdominal Muſcles, forced into the Wound of the Diaphragm, dilate it, paſs into the Cavities of the Breaſt, and thus by compreſſing the Lungs, and diſturbing the Motion of the Heart, prove mortal ſooner or later, after intolerable Agonies. Inſtances of this are found in *Paré*, *Lib.* 10. *Cap.* 32. and in *Sennertus*, *Lib.* 2. *Part.* 2. *Cap.* 13.

Hence appears the great Danger of Wounds of the Abdomen. *Hollerius*, however, in *Comment.* in *Aph.* 18. *Sect.* 6. *Hippocrat.* tells us, that in diſſecting the Body of a Perſon who had been hanged, he ſaw a Wound in the fleſhy Part of the Diaphragm, covered with a Cicatrix.

Fifthly, Thoſe Wounds which prevent the Motion of the Chyle into the Heart, ſuch as a Diviſion of the Oeſophagus, large Wounds of the Stomach, or ſmall Inteſtines, an entire Diviſion of the ſuperior Inteſtines, and a Wound of the Thoracic Duct, or Receptacle of the Chyle.

In this Number are enumerated the Wounds of thoſe Parts whoſe Soundneſs is requiſite to ſwallow and digeſt the Aliments, and convey the Chyle prepared from them into the Maſs of Blood, in order to reſtore thoſe Parts which are daily loſt by the Action of Life and Health.

As for a Diviſion of the Oeſophagus; an entire Diviſion of the Oeſophagus deſtroys all Paſſage of the Aliments to the Stomach; for that Wounds not entirely dividing the Oeſophagus, have frequently been cured, is certain from various Obſervations in practical Authors. See *Schenckius*, *Obſerv. Med. Lib.* 3. *Obſ.* 6. and *Bohnius de Renunciatione Vulnerum*. But when the Oeſophagus, together with the Aſpera Arteria, is totally divided, *Paré*, in *Lib.* 10. *Cap.* 31. tells us, that the Extremity of the divided Oeſophagus is ſo retracted to the Stomach, that it cannot be united with the other Extremity, tho' in one Inſtance he by Suture ſo united the Wound of the Aſpera Arteria, as to reſtore the Speech of the Patient, that he might diſcover the Perſon who wounded him; but he died on the fourth Day after. Another Inſtance of the ſame Kind is found in the ſame Place. But as the Oeſophagus is covered with the Aſpera Arteria, is incumbent on the Bodies of the Vertebræ, and has very large Veſſels adjacent to its Sides, it is rarely wounded alone; for which Reaſon it is probable, that the Wounds of the adjacent Parts may in like manner prove the Cauſe of Death. To this Purpoſe *Boerhaave* gives us a memorable Hiſtory in his *Atrocis nec deſcripti prius Morbi Hiſtoria*.

As for large Wounds of the Stomach; all the Aliments and Drink ſwallowed are received into the Cavity of the Stomach, by whoſe Fabric, the Affuſion of the Humours, and their Continuance there, they are ſo changed, that being thence conveyed through the Inteſtinal Tube, they afford a Matter, which being reforbed into the ſmall venous Ducts, mixed with the Blood, and farther elaborated, may reſtore what is loſt from the Body by the Actions of Life. If, therefore, a large Wound is inflicted in the Stomach, its Contents will fall through the Wound out of the Body, or into the Cavity of the Abdomen; and thus all Nutrition will neceſſarily be deſtroy'd. Beſides, Wounds of the Stomach are dangerous, becauſe its Subſtance is full of ſo many Arteries, Veins, and Nerves. But when Perſons die of Wounds of the Stomach, ſoon after the Reception of the Wound, we cannot aſcribe the ſucceeding Death to the Defect of Nutrition, but to the Wound made in the Subſtance of the Stomach. Two Inſtances of this Kind are found in *Bohnius de Renun. Vuln.* in which Death ſucceeded two Days after the Wounds were inflicted. But when Wounds of the Stomach prove mortal, becauſe the Stomach cannot contain the Aliments taken, a ſlower Death enſues, and the Patient gradually waſtes away for want of Nourihment. It has, alſo, ſometimes happened, that ſuch Wounds degenerating into fiſtulous Ulcers, have remained open for ſeveral Years, whilſt the Patient could at Pleaſure let his Aliments and Drink out at this Aperture, or retain them in it by cloſing the Wound by means of an external Apparatus. Two Inſtances of this Kind are found in

Schenckius

Schenckius, in Observationibus Medicinalibus rarioribus. In the *Philosophical Transactions*, No. 420. there are two remarkable Instances of perfect Cures produced in such Wounds of the Stomach, and which seem to evince, that all Wounds of the Stomach, even though large, are not absolutely mortal, when the Hands of the Surgeon can have Access to the Wound in order to unite it by Suture. Good Hopes may be entertained with respect to the Cure of small Wounds of the Stomach, provided it is not distended with Aliments or Drink; for in this Case the Stomach remaining contracted, its Wounds may be consolidated.

As for entire Divisions of the small and superior Intestines; such Wounds seem to be absolutely mortal; for the Extremity of the divided Intestine will discharge the Chyle into the Cavity of the Abdomen; and when this Chyle is corrupted, it will consume all the Viscera contained in the Abdomen, and hence certain Death ensues. But if either by Chance or Art, the Extremity of the divided Intestine grows to the external Margin of the Integuments, a Way will be made, through which by the peristaltic Motion of the Stomach and Intestines, all the Contents of the Intestine will be eliminated from the Body; for the Chyle conveyed from the Stomach thro' so large a Portion of the Intestinal Tube, and its Gyrations and Windings, is by that means hindered from going out of the Body, before all that Part of it which is subservient to the Nutrition of the Body is resorbed by the Mouths of the lacteal and meseraic Vessels. If then the small Intestines are entirely divided in the superior Part, that is, where they are pretty near the Pylorus, the Body will necessarily be deprived of Nourishment, and the Patient will die of a slow Consumption, if the Contents are discharged through the Wounds of the Integuments; but if, falling into the Cavity of the Abdomen, they are there accumulated, they are there corrupted, and accelerate the Death of the Patient.

But Wounds both of the large and small Intestines in Parts more remote from the Stomach, as, also, such Wounds as do not entirely divide the Intestinal Tube, are always dangerous, though not absolutely mortal. Of this a memorable Instance is found in *Mem. de l'Acad. Royale des Sciences, l'An.* 1705. And in the *Philosophical Transactions* abridged, *Tom.* 5. we have an Account of a large Dog, in which the small Intestine was longitudinally divided, and upon replacing the Intestine without Suture, the Wound of the Abdomen was stitched up, and the Animal cured without any bad Symptom.

Various Observations of this Kind occur in practical Authors. It is, also, certain from many Instances, that Persons have survived total Divisions both of the small and large Intestines, when the Extremity of the divided Intestine was fixed to the external Wound, in order to procure a Discharge for the Faces. But in this Case it is requisite the Length of the Intestine from the Stomach to the Part where it is divided, should be such, as that the Chyle prepared from the Aliments, and resorbed by the Lacteal and Meseraic Vessels, may be sufficient for the Nourishment of the Body.

As for Wounds of the Thoracic Duct, or Receptacle of the Chyle; all the Chyle resorbed by the lacteal Vessels from the Intestines, and a large Quantity of Lymph conveyed through the Lymphatic Veins, meet in this common Chanel. When this, therefore, is wounded, and discharges its contained Liquors, all those Effects cease which depend on a Mixture of the Chyle with the Blood for the farther Perfection of the Actions of the Vessels and Viscera, that is, Nutrition is destroyed. It is true that the Orifices of the Meseraic Veins every-where open into the Intestines, resorb the thinnest Part of the Chyle and convey it directly to the Liver; but the white chylous Juice is only received by the Lacteals, and Life seems incapable of being sustained, if only the Meseraic Veins absorbed the thinnest Part, since by this means the Admission of the *Chyle*, properly so called, into the Mass of Blood, would be hindered. *Lower*, in his Treatise *de Corde*, has by beautiful Experiments demonstrated, that no Chyle is resorbed by the Meseraic Veins. And when the Entrance of the Chyle into the Blood is hindered, it is certain that Life cannot be long sustained.

It rarely happens in Mankind, that the Thoracic Duct alone is wounded; for it lies generally on the Middle of the Bodies of the Vertebræ, in the middle Space between the *Vena sine Pari* on the Right Side, and *Aorta Descendens* on the Left; so that the Aorta, for the most part, lies upon it; then rising higher, it runs upon the Bodies of the Vertebræ, under the Oesophagus, and under the Arch of the *Vena sine Pari*; thence above the Bodies of the Vertebræ, it inclines to the Left, proceeds under the Left Carotid, as far as the Middle of the last Vertebra of the Neck, and there being bent in the Form of an Arch, it tends downwards to the Left, and is terminated in the Left Subclavian Vein. During the Whole, therefore, of this Course, it is safely lodged, and adjacent to large Vessels, so that it can hardly be wounded without other Parts, the Wounds of which may be productive of Death.

Bonetus, in *Sepulchret. Anatom. Lib.* 4. has a remarkable Instance, in which from the succeeding Symptoms, the Thoracic Duct seems to have been wounded, tho' from the long time the Patient lived, it seems not to have been totally divided.

Wounds in their own Nature mortal, but curable by Art, are,

First, Wounds of any of the Contents of the Cranium, which are capable of being relieved by the Trepan.

In this Paragraph are considered those Wounds which prove infallibly mortal if left to themselves; but whose Effect, which is Death, may be prevented by proper Measures.

The Wounds of this Kind first specified, are those of the Encephalus, by which is meant every thing contained in the Cavity of the Cranium. Now it is certain from Anatomy and Physiology, that the Cavity of the Cranium is naturally exactly full. When therefore, by a Change of Figure in the Cranium, its Cavity is lessened; or when by a Rupture of the Vessels, the extravasated Humours are collected under the entire Cranium, the soft Fabric of the Encephalus is necessarily compressed, all the Functions depending on it are injured, and at last totally destroyed.

If, therefore, the Cranium pressed inward, or the extravasated Humours by their Quantity compress the Brain; or if the Juices becoming corrupted by their Continuance there, by their Acrimony corrode that tender Pulp on which Life and Health depend, Death will be the Effect of such a Wound. But if the extravasated Humours are lodged in such a Part of the Cranium, that they can be removed by an Aperture made with the Trepan, it easily appears that the Patient may be preserved. See CAPUT.

Two things are, therefore, requisite in such a Wound; which are, that the evident Cause of Death is found to be the extravasated Humour compressing the Brain; and that this Humour is lodged in such a Place, that it may be safely eliminated.

Secondly, Wounds of large Arteries or Veins, in Parts to which the Hands of the Surgeon cannot have Access.

It is absolutely necessary a Surgeon should know the Course of the large Arteries and Veins, especially in the Limbs; for large Trunks of Vessels wounded in the Cavities of the Body, will not admit his Hand. It is in a particular manner requisite, he should know those Parts of the Limbs where the large Arteries and Veins are so naked as to be easily compressed. Of this Kind in the superior Limbs, are the subaxillary Parts, and the anterior and superior Part of the Os Humeri, where the large Trunk of the Artery may be compressed almost to the naked Bone, and by that means Hæmorrhages from Wounds inflicted in the inferior Parts are easily stopt. In the inferior Limbs, similar Places are found in the interior and anterior middle Parts of the Thigh, as, also, under the Hams. In all these Places, Compresses strongly applied with a *Tourniquet*, so compress the Trunks of the Vessels as to hinder all Passage of the Blood. Thus mortal Hæmorrhages are prevented, and an Opportunity given the Surgeon, after the Suppression of the Blood, and the Dilatation of the Wound, if necessary, to find the wounded Artery, and apply proper Medicines, or Ligature, as he thinks fit. Hence, at present, no Wound of the Limbs seems absolutely mortal in consequence of an Hæmorrhage, which may be checked by a Compression of the arterial Trunks, especially in the subaxillary Parts, and in the Groins. And if the wounded Artery is lodged so deep, that it cannot be tied, the Amputation of the Limb is the only remaining Method to be taken for the Preservation of the Patient. But when Surgeons are ignorant of the Course of the large Vessels, they by Ligatures, and absorbent styptic Powders, such as *Gypsum*, hinder the Blood discharged from the wounded Vessel, from flowing through the Aperture of the Wound. And this Blood filling the whole Membrana Adipola, and afterwards becoming corrupted, preys on all the Parts with a terrible Putrefaction, of which there are many melancholy Instances.

Thirdly, Wounds of the Viscera, to which the Surgeons Hands, and proper Medicines, can reach.

Unless it were certain from Experience, no one could believe that Parts, even of the vital Viscera laid bare by a Wound, may be cut off, lest afterwards becoming corrupted, they should prove mortal. *Celsus*, in *Lib.* 5. *Cap.* 26. tells us, "That "if any Part of the Liver or Lungs hangs out, it is to be "cut off." There is a memorable Instance of this Kind recorded in *Tulp. Obs. Med. Lib.* 2. *Obs.* 17.

Fourthly, Such Wounds as are fatal thro' a Discharge of the Fluids, into those Cavities whence they may be taken with-

out Danger of Life, as it happens in ſome Wounds of the Thorax, Abdomen, Ureters, Bladder, and Inteſtines.

Many Wounds prove mortal, not ſo much on account of the large Quantity of the extravaſated Blood, as becauſe that Fluid becoming corrupted by Time, and the Heat of the Part, by its putrid Quality corrupts and waſtes the Viſcera on which it acts. Thus, for Inſtance, when the Thorax is wounded, after a copious Hæmorrhage the Patient fails into a Deliquium, the divided Veſſels contract themſelves, and the Diſcharge of the Blood ceaſes. The Blood, however, remains in the Cavity of the Thorax, where becoming corrupted, and corroding the adjacent Lungs, it deſtroys the Patient by a ſlow Conſumption. The ſame holds true in the Cavity of the Abdomen. But the Paracenteſis may be inſtituted both in the Thorax and Abdomen; and thus the extravaſated Blood may be eliminated, and all theſe Misfortunes prevented. But if a Wound is ſo inflicted in the Ureters, or Bottom of the Bladder, that the Urine flows into the Cavity of the Abdomen, it is ſufficiently obvious, that in this Caſe, the Urine naturally diſpoſed to Putrefaction, will far ſooner become putrid, by which means all the Contents of the Abdomen will be greatly injured. But by perforating the Abdomen, all the Fluids collected in it may be evacuated; and by introducing a flexible Catheter into the Bladder, the Urine may be hindered from collecting itſelf in the Bladder, and diſtending it; hence the Bladder remaining always contracted, the Wound inflicted, will be the more eaſily conſolidated. But if the Ureter is divided, after evacuating the Urine diſcharged into the Cavity of the Abdomen, a dry Diet is to be uſed; in which Caſe there are great Hopes, that the Extremity of the divided Ureter may be conſolidated. The Uſe of the Kidney will indeed be deſtroy'd by this means; but it is certain from many Obſervations, that the other Kidney may ſupply its Office, and that the Patient may enjoy perfect Health; for when the Cavity of one of the Ureters is obſtructed by a Stone impacted in it, the Patient has often ſurvived a great while, the other Kidney remaining ſound, and in that Caſe having its Bulk, generally, greatly increaſed.

We know that the Urine flows from the Wound into the Cavity of the Abdomen, when little or no Urine is diſcharged, and the Abdomen is daily more and more diſtended by a Tumor.

The ſame, alſo, holds true in ſome Wounds of the Inteſtines.

A Wound of itſelf not mortal, may be prognoſticated mortal, by theſe Cauſes:

Firſt, By neglecting to purge off the diſcharged Pus, from which a purulent Tabes arites; or the extravaſated Blood, which hence become putrefied.

Under this Claſs are comprehended ſuch Wounds as are inflicted in thoſe Parts, the Soundneſs of which may be removed without deſtroying Life, though ſuch Wounds are ſometimes ſucceeded by Death, not ariſing from the Wound as the Cauſe, but becauſe by the Careleſneſs of the Patient, the Error of the Phyſician, ſome other Diſeaſe not ariſing from the Wound, or a Peculiarity of Conſtitution, ſuch a Change is induced, as that the Functions requiſite to Life are aboliſhed. Theſe Changes are produced by the four following things:

A Neglect to purge off the diſcharged Pus, from which ariſes a purulent Tabes.

From what is already ſaid, it is obvious, that in every conſiderable Wound, Pus is not only formed, but is even requiſite to a Separation of thoſe things which would hinder the Conſolidation of the Wound. Now if the Condition of the Wound is ſuch, that the Pus formed in the Wound, falls into the Cavities of the Body, or, being too long left in the Surface of the Wound, is attenuated and reſorbed by the open Orifices of the Veins, in this Caſe the whole Maſs of Blood may be infected by a purulent Cacochymy, whence ariſe an hectic Fever, and a ſlow Conſumption; now if it appears, that Pus lodged in any Cavity of the Body, might have been ſafely evacuated, or that the Reſorption of the Pus, might have been prevented by a proper Depuration of the Wound, it is obvious, that the Death ſucceeding it is not to be aſcribed to the Wound as its Cauſe, but to the Omiſſion of purging off the extravaſated Pus. When, after the Amputation of large Limbs, broad Wounds daily collect a large Quantity of Pus, a great Difficulty frequently happens in the Cure; for if often in a Day the Wound is cleanſed, and the Pus wiped away, the Conſolidation of the Wound is by that means prevented, and it degenerates into the Nature, as it were, of a Fontanel, and diſcharges an incredible Quantity of Fluids. Thus the Patients are waſted away by a true Conſumption, while there is no Fault either in the Fluids or Solids of the Body, becauſe by the too great Formation of Pus, ſo much of the Nouriſhment of the Body is loſt, that all the Parts are conſumed. But if the Wound remains long covered, the Pus being, by its Continuance, and the Heat of the Place, attenuated and rendered more acrid, is reſorbed by the open Mouths of the Veins, by which means it is mixed with the Blood, and induces a purulent Cacochymy and Conſumption; or, being by a Tranſlation conveyed to ſome of the more noble Viſcera, proves mortal; many Inſtances of which occur in Practice.

As for the Evacuation of the extravaſated and putrefied Blood; *Hippocrates*, in *Aph.* 20. *Sect.* 6. affirms, "That "Blood preternaturally diſcharged into the Abdomen, muſt "neceſſarily be ſuppurated." *Galen*, in his Comment on this Place, tells us, that ſome inſtead of ἐς τὴν κοιλίην, read ἐς κοιλίην, without the Article, by which an Effuſion of Blood into any Cavity of the Body is denoted; and he adds, that this Opinion is confirmed by the Addition of the Word *preternatural*. Then the Senſe of this Aphoriſm is, that Blood diſcharged from its natural Place into any Cavity of the Body, muſt neceſſarily be converted into Pus. *Galen*, in the ſame Place, tells us, that by Suppuration is meant every Corruption of Blood, but not a Converſion into *Pus*, properly ſo called. If a free Acceſs is given to the Air, Blood diſcharged into any Cavity of the Body, is pretty ſoon putrefied, and proves mortal by corrupting the adjacent Viſcera, or by being reſorbed and deſtroying the tender Veſſels of the Viſcera by its putrid Acrimony. But if no Acceſs is given to the Air, it may remain for a long time without Corruption, and ſometimes being gradually attenuated, be again reſorbed without any Harm, as it frequently happens after violent Contuſions, when the Blood extravaſated under the entire Skin, often remains for a Month and more, but afterwards gradually diſappears without any farther Injury. When, therefore, Blood being diſcharged into the Cavities of the Body, and a free Acceſs given to the Air, Death enſues, and in the Carcaſe it is not found, that the Wound is in its own Nature mortal, the Death of the Patient is to be aſcribed to this Cauſe, if the extravaſated Blood could have been ſafely evacuated by Art.

Secondly, By any Fault committed with reſpect to the Six Non-Naturals.

It is certain from Pathology, that the Non-naturals are divided into ſix Claſſes, Air, Meat, Drink, Reſt, Retention, and Excretion, Sleep and Watching. They are thus called, becauſe by the Uſe or Abuſe of them, they are either natural Benefits, or preternatural Evils. The prudent Phyſician directs all theſe in a proper manner, and orders the Patient to abſtain from ſuch things as are injurious, and injoins the Uſe of ſuch things as are beneficial. Now, if by the Careleſneſs of the Phyſician, or the Obſtinacy of the Patient, Faults are committed in the Uſe of the Six Non-Naturals, a Wound of itſelf not mortal, may be ſo changed as to bring on Death. Inſtances of this are found in *Paré*, *Lib.* 10. *Cap.* 14. *Hildan. Obſ. Chirurg. Cent.* 1. *Obſ.* 20. *ibid. Obſ.* 17. and *ibid. Obſ.* 25.

Thirdly, By a Neglect or Error of the Surgeon.

It is certain from many Obſervations, and confirmed by daily Experience, that Contuſions and ſlight Wounds of the Head, when negligently treated, have produced terrible Symptoms, and Death. Many die of Hæmorrhages, who might have been preſerved if the Trunks of the Arteries had, by proper Ligature, been compreſs'd in thoſe Parts, where they are almoſt naked. In Battles many of the Wounded die only becauſe the Surgeons cannot take ſufficient Care of ſo large a Number. The Death of wounded Perſons is, alſo, frequently owing to the Error of Surgeons. Inſtances of which are found in *Paré*, *Lib.* 10. *Cap.* 32. *Hildan. Obſ. Chirurg. Cent.* 6. *Obſ.* 80. and *Hippocrates Epidem. Lib.* 5. *No.* 22.

Fourthly, By the Conſtitution of the Patient whether natural, morbid, manifeſt from the Hiſtory of the particular Patient; or ſometimes ſo ſingular, that it can only be diſcover'd by this Effect. And this Conſtitution of the Patient is always to be had a due Regard to by the Phyſician in his Report to the Judges.

It is of great Importance in making Reports with reſpect to Wounds, to have a due Regard to the Temperament of the Patient, which, however, is often totally overlooked. In many Places, Phyſicians and Surgeons are, by public Authority, appointed to inſpect the Bodies of thoſe who are killed, and make a Report of what they have ſeen to the Judges. But they often do not conſult the Phyſician or Surgeon, who before attended the wounded Perſon, in order to know his Temperament,

perament, previous Diſeaſes, and the Symptoms ſubſequent to the Wound. But all theſe Things ſeem highly neceſſary, in order to make a faithful Report concerning the Wound: For ſome Perſons have nervous Syſtems ſo capable of being irritated, that they are by the ſlighteſt Cauſe ſeized with Spaſms, a *Tetanus*, or other like Misfortunes: Others, when they ſee the Blood flowing from another Perſon's Wound, fall into a *Deliquium*. Now it is probable, that in ſuch Perſons, violent Symptoms, and even Death, may be produced by a ſlight Wound; but whether the ſucceeding Death is to be aſcribed to ſuch a Wound alone, as its Cauſe, is hard to determine. Beſides, in ſome Patients, towards the End of Life, hardly any Blood remains in the Body. Thus in phthiſical Patients, after Death only a few Ounces of Blood are ſometimes found: Now if from ſuch a Patient, by a ſlight Wound, the ſmall Quantity of Blood ſhould be evacuated, infallible Death will enſue; but that Death will not depend on the Wound alone. It is ſufficiently known, that the *Lues Venerea*, and a malignant Scurvy, ſo corrode the Subſtance of the hardeſt Bones of the Body, that being rendered entirely carious, they may be broken by the ſmalleſt Force. If therefore, in ſuch a Caſe, a Fracture of the *Cranium*, by a gentle Preſſure, ſhould be productive of Death, this Effect will not depend on the wounding Cauſe alone; but theſe, and other Circumſtances of a like Nature, may be known from the Things obſerved in the Patient's Body before the Wound was inflicted. Perhaps there may be other Things latent, of which there never appeared any Sign, and which only diſcover themſelves by the Infliction of the Wound: For when we conſider what has been obſerved in the Bodies of Perſons who have died ſuddenly, we find that Death has often been inſtantaneouſly produced by the moſt latent Cauſes; whereas before Death nothing of any Moment appeared injur'd. Now if in ſuch a Perſon a Wound is inflicted a little before Death, the ſucceeding Death, which depends on a quite different Cauſe, would be unjuſtly aſcribed to the Wound. Thus *Valerius Maximus*, *Lib.* 9. *Cap.* 12. tells us, "That in "the End of Life, which is expoſed to various and occult "Cauſes, ſome Things are frequently, tho' undeſervedly, cal-"led mortal; ſince they rather happen at the time of Death, "than bring it on." Hence in ſuch Caſes it ought to be reported to the Judges, that the Wound was found ſuch, that the Death ſucceeding it did not ſeem to be aſcribed to the Wound as its Cauſe. Thus Phyſicians and Surgeons diſcharge their Offices faithfully, and the reſt belongs to the Judges.

Upon this Doctrine depends the Report concerning Wounds, and a Determination of the Time in which they may prove mortal.

Judges, before paſſing Sentence on Murderers, generally order Phyſicians and Surgeons to examine the Body of the Perſon killed, in order to diſcover whether his Death was cauſed by the Wound: Theſe Phyſicians and Surgeons accurately obſerve what Parts of the Body they find hurt by the Wound; and then by a common Conſultation conclude whether the Wound was abſolutely mortal; or whether, tho' mortal of itſelf, Death might have been prevented by Art; or whether the Wound has injured thoſe Parts, the Soundneſs of which was not abſolutely neceſſary to Life, and yet Death enſued, either from a peculiar Temperament of the wounded Perſon, or from the Careleſſneſs or Neglect of thoſe who had the Management of him. All theſe Circumſtances are related to the Judges, and this is call'd giving a Report concerning Wounds, *Renunciatio Vulnerum*. Hence it appears, how great Caution is neceſſary, ſince unſkilful Surgeons, when examining a Carcaſe, rather make than inſpect Wounds. We ought, as much as poſſible, to inquire into the Figure and Bulk of the wounding Inſtrument, the Situation of the wounded Perſon, and of him who gave it, at the Time it was inflicted; and into all the Symptoms which happened between the Reception of it and the Death of the Patient.

Beſides, all thoſe Things are to be conſider'd which happen'd to the Patient, or were applied after the Wound was inflicted; then, by a prudent and cautious Inciſion, we are to inveſtigate how far, and thro' what Parts the wounding Inſtrument paſſed: Thus from a Knowledge of the Uſe of the Parts wounded, we conclude whether the ſucceeding Death ought to be aſcribed to the Wound inflicted, as its Cauſe, or not.

But it ſeems not to be eaſily determin'd to what Space of Time the Mortality of Wounds is to be limited. Many are of Opinion, that if the wounded Perſon ſurvives nine Days, the ſucceeding Death is not to be aſcrib'd to the Wound; and that if the Perſon dies before that Time, then the Wound inflicted is neceſſarily and abſolutely to be accounted mortal: But a large Artery, divided either in the Arm or Leg, may, in a few Hours, or even ſooner, put an End to a Perſon's Life, tho' this Wound was not abſolutely mortal, but might have been cur'd by Art. Thus, alſo, extravaſated Blood in the *Cranium*, if lodg'd in a Part from which it could not be extracted by Art, whilſt its Quantity is ſo ſmall that, by Compreſſion, it does not immediately diſturb the whole Uſe of the Brain, may there remain for ſeveral Weeks, become gradually corrupted, and at laſt, by corroding the *Cerebrum*, *Cerebellum*, and *Medulla Oblongata*, produce Death; and ſuch a Wound is juſtly to be reported as mortal, tho' the Perſon has ſurviv'd it ſo long. If the ſmall Inteſtines are totally divided near the *Pylorus*, Life may be protracted for ſeveral Days, till, thro' a Defect of Nutrition, the Patient is gradually waſted away, and yet ſuch a Wound is abſolutely mortal. Hence it is obvious, that nothing certain can be determin'd with reſpect to the Mortality of Wounds, from the Time intervening between the Infliction of the Wound, and the Death of the Patient.

From the Hiſtory of Wounds, alſo, already given, the Prediction of other Events which are to be foretold, will be eaſy.

In treating of the Prognoſtics of Wounds, we have determin'd thoſe Things which, from a Knowledge of the Wound, might be foreſeen, as its Conſequences; we have, alſo, treated of the Life or Death of the wounded Perſon: The other Things relating to the poſſible or impoſſible, the eaſy or difficult Cure, and the Effects remaining after the Cure of the Wound, are evidently deduc'd from a perfect Knowledge of its Nature. For when we know from Anatomy, and the Doctrine of the Uſe of the Parts, what Parts are wounded, and what Functions are aboliſh'd or deprav'd, we may determine whether the Cure is poſſible or impoſſible, eaſy or difficult; or whether, after the Cure of the Wound, any of the Functions will remain injur'd. Thus, for Inſtance, if a Wound is inflicted on the Back of the Hand, the Phyſician, from Anatomy, knows that the Tendons of the Muſcles which extend the Fingers are plac'd here; he therefore orders the Patient to ſtretch out his Fingers; and if he perceives that he is abſolutely incapable of erecting his fore Finger, he concludes that the Tendon, compos'd of the united Tendons of the common extenſor Muſcle, and that of the *Muſculus Indicator*, is divided: But if it is poſſible that the Extremities of the divided Tendon can be brought into Contact, and united, he may promiſe a perfect, tho' a difficult, Cure. But if this cannot be done, he may ſafely predict, that, after the Cure of the Wound, the Erection of the fore Finger will be always aboliſh'd, and never capable of being reſtor'd. In predicting Things of this Nature, both Phyſician and Surgeon ought to be very cautious; becauſe all the Misfortunes which remain after the Cure of the Wound, will be aſcrib'd to them, unleſs they have foretold that ſuch Misfortunes will certainly happen, or, at leaſt, are to be dreaded.

The Cauſe of the ſeveral Phenomena appearing when a Wound is inflicted in a viſible Part of a ſound and robuſt Body, is ſufficiently obvious, to any one acquainted with the vital and animal Actions; and all theſe Symptoms have been already accounted for.

The exterior Coats of the Arteries, when prick'd, cut, bruis'd, broken, diſtracted, or corroded, whilſt the internal Coat remains entire, are dilated, by the Impetus of the Blood, and form a Bag, or Sack, which often increaſes to the Bulk of an Egg, acquires callous Sides, has a Pulſation, is of a bright-red Colour, diſappears upon Compreſſion, but returns to its former State when that Compreſſion is remov'd, enlarges its Artery, and by its Compreſſion leſſens the adjacent Veſſels: This is call'd a true Aneuryſm, the Cauſes, Signs, and Effects of which, are eaſily ſeen. An Aneuryſm of the Heart, its Origin, Signs, and Effect, are hence to be accounted for, and underſtood.

We have already obſerv'd what Misfortunes follow when an Artery is entirely divided, or when a Wound penetrates into the Cavity of an Artery, ſo as not entirely to divide it: But in this Aphoriſm are conſider'd thoſe Misfortunes which are to be dreaded when Arteries are ſo wounded, that the Wound does not penetrate their Cavities, but only divides their external Coats. For it is certain, from Anatomy, that the Arteries, eſpecially of the larger Kind, have pretty thick Coats, the exterior of which generally ariſes from the common Membrane, which lines that Cavity of the Body thro' which the Artery paſſes. Under this exterior Coat lies a thin cellular Coat, thro' which run many Veſſels ſubſervient to the Nutrition of the Arteries; under this lies the glandular Coat, which, perhaps, is no more than a Part of the former; and under the glandular lies the muſcular Coat, which is thick, ſtrong, ſeparable into ſeveral Lamina, and conſiſting of orbicular Fibres; and the laſt Coat, conſtituting the internal Cavity of the Artery, is thin, and compos'd of longitudinal Fibres.

Whilſt the Blood is, by the Action of the Heart, continually forc'd into the full Arteries, they are obſerv'd to be manifeſtly and equally dilated thro' all their Circumferences; the Strength

of the Coats compoſing the Arteries reſiſts their too great Dilatation; and when the Action of the Heart ceaſes, by the Strength, eſpecially of their orbicular Fibres, they are again contracted into their former Dimenſions. Now if by the Separation of Coheſion, eſpecially in the orbicular Fibres of any Part of an Artery (for Wounds of the external and cellular Coats are leſs dangerous) the Strength of the Sides is diminiſh'd, whilſt the diſtending Cauſe remains, it will forthwith dilate the Artery more in that Part, change its equable conical Figure, and expand the weaken'd Part into a Sack; and this is call'd a true Aneuryſm, which properly ſignifies no more than the Dilatation of an Artery.

The Cauſe, therefore, of an Aneuryſm is, every thing which leſſens the Coheſion of the Coats in any Part of an Artery; and it is certain, from frequent Obſervation, that this principally happens when Arteries are prick'd or cut: For in Veneſection it frequently happens, that a Ramification of an adjacent Artery is wounded by the Point of the Lancet, a few Days after a Tumor begins to ariſe, which raiſes the Skin, has a manifeſt Pulſation, and is daily enlarg'd, unleſs it is in the Beginning check'd by the Application of Compreſs and Bandage.

As for Contuſions of the Arteries; it has been frequently obſerv'd, that violent Contuſions of an Artery have produc'd an Aneuryſm; and a memorable Inſtance of this is found in *Lanciſi, de Motu Cordis & Aneuryſmatibus:* And I myſelf, ſays *Vanſwieten*, ſaw a remarkable Example of the ſame Kind.

As for Diſtractions of the Arteries; in practical Authors many Inſtances occur, in which, after violent Efforts, lifting too heavy Burdens, exceſſive Sneezing or Coughing, the diſtracted Arteries have degenerated into Aneuryſms. Of this an Inſtance is found in *Hiſt. de l'Acad. Royal. des Sciences, l'An.* 1700. It is, alſo, obſervable, that thoſe Horſes which are forc'd to ſtrain hard in drawing great Weights up aſcending Ground, have Aneuryſms, and varicoſe Tumors, in the Veins of their poſterior Legs. The like Misfortune is, alſo, ſometimes obſerv'd, in Porters.

As for Corroſions of the Arteries; it is certain, that in ſome Diſeaſes the Humours may ſo degenerate, that, becoming highly acrid, they corrode the hardeſt Parts of the Body; by the Scurvy the hardeſt Teeth are conſum'd, and a *Lues Venerea* renders the largeſt and ſtrongeſt Bones in the Body carious. A virulent Cancer, by its dire Contagion, conſumes all the adjacent Parts. Thus in a Scurvy we often ſee, that when the Veſſels are corroded, the extravaſated Blood under the Integuments produces livid Spots, and mortal Hæmorrhages have been ſometimes obſerv'd to proceed from the ſame Cauſe. Hence we may eaſily conceive how the Coats of the large Arteries may be ſo corroded as to be extended into an aneuryſmatic Sack. Two Inſtances of this Kind are found in *Lanciſi de Motu Cordis & Aneuryſmatibus.*

By whatever of theſe Cauſes any Part of an Artery is weaken'd, it will in that Place yield more, and be expanded by the diſtending Blood: And as at every Pulſation of the Heart the diſtending Cauſe is afreſh applied to the weaken'd Part of the Artery, the Capacity of the Aneuryſm will be gradually increas'd. Hence Aneuryſms are ſometimes expanded to an incredible Bulk, eſpecially if they happen in the large Trunks of Arteries. A memorable Inſtance of this we have in *Ruyſchii Obſervat. Anatom. Chirurg. Cent. Obſervat.* 38. In the largeſt Aneuryſms it frequently appears, that the Membranes of the extended Sack are very thick; whereas they might be ſuppos'd to be render'd thinner, on account of their Diſtraction. But this ſeems to happen becauſe the Blood accumulated in ſuch dilated Sacks, is concreted into polypous Maſſes, which being applied to the dilated Coat of the Artery, may greatly increaſe its Thickneſs.

We now come to inquire by what Signs an Aneuryſm may be known, and diſtinguiſh'd from other Tumors; ſince it is certain from ſeveral Obſervations, that very ſkilful Surgeons in other Reſpects, have in this committed egregious Blunders, and by imprudently opening the Aneuryſm, kill'd, inſtead of curing the Patient. An Aneuryſm is, therefore, known to be preſent when the Cauſes already ſpecify'd have preceded, and a Tumor ariſes in that Part where, from Anatomy, we know that a large Artery is ſituated; when a manifeſt Pulſation is perceiv'd in ſuch a Tumor; and when, by a gentle Preſſure, it diſappears, or is greatly diminiſh'd, but immediately returns to its former Bulk when the Preſſure is remov'd. But it is to be obſerv'd, that the Colour of the Skin is rarely chang'd by an Aneuryſm, unleſs it is of long ſtanding, or very large; for then the Skin being corroded or attenuated by the Diſtraction, its Colour appears red: Beſides, in a ſmall and beginning Aneuryſm there is always a Pulſation; whereas when it has grown to a greater Bulk, the Pulſation is often not perceiv'd, partly becauſe the Coats of the Aneuryſm are become thicker, and partly becauſe the Impetus of the Blood propel'd from the Heart cannot act ſo ſtrongly on the Aneuryſm, when large, as to elevate it at each Pulſation of the Heart. But when an Aneuryſm is compreſs'd, eſpecially if it is large, and near the Heart, unleſs the Compreſſion is made gently and gradually, there is great Danger leſt the Patient ſhould be ſuddenly ſuffocated, whilſt the concreted Blood expreſs'd from the Cavity of the Aneuryſm ſo reſiſts the Blood forc'd from the Heart thro' the Artery, that the Motion of the Heart is ſuddenly ſuffocated. Nor is a large Aneuryſm, when compreſs'd by the Hand, to be all at once ſet at Liberty from the Compreſſion, but gradually; otherwiſe the Patient falls into a *Deliquium*; becauſe the Blood ſuddenly ruſhes into this empty Sack. For this Reaſon, upon compreſſing a large Aneuryſm, the Patient immediately complains of an intolerable Oppreſſion about his Breaſt. But when an Aneuryſm happens in the internal Parts, it is not to be known without great Difficulty: But if the known Cauſes have preceded; if an unuſual Pulſation is perceiv'd by the Patient; if the Motion of the Heart is diſturb'd, and almoſt ſuffocated by an increas'd Velocity of the Blood ariſing from muſcular Motion, or any other Cauſe, it is highly probable that there is an Aneuryſm in the internal Parts.

The Misfortunes *produc'd by* an Aneuryſm depend on this, that it, by its Bulk, compreſſes the adjacent Parts, and by that means diſturbs and hinders their Action; that it changes the Cavity of the Artery, and deſtroys the equable Circulation of the Blood thro' it; by which means the Action of the Heart is at laſt greatly hinder'd. Hence it is obvious, that very various Diſorders may be produc'd by an Aneuryſm; but that all the Misfortunes ariſing from it are the worſe, the larger, and the nearer the Heart it is.

Another Source of the Misfortunes ariſing from an Aneuryſm depends on this, that the Fluid contain'd in the aneuryſmatic Sack begins gradually to degenerate: For in a large Aneuryſm the Blood is almoſt at Reſt, or at leaſt moves very ſlowly; hence the Blood has leſs Attrition and Heat, by which means it acquires a Diſpoſition to that Degeneracy which happens from a Diminution of Motion and Heat; for polypoſe Concretions begin to be produc'd; and, when theſe are once form'd, they have a Power of aſſociating to themſelves ſimilar Parts of the affluent Blood, by which means the former Maſs is augmented, as is obſerv'd under the Article FIBRA: Hence in large Aneuryſms, when diſſected, very often much Blood is not found, but a ſurpriſing polypoſe Texture form'd of ſtagnant Blood, which by the Application of its own Subſtance ſo ſtrengthens the weak Part of the Artery, that it does not ſoon break, but the Patient often lives a great while: At laſt the concreted Blood, together with the Blood ſtagnant between the *Laminæ* of the polypoſe Subſtance, begins to be corrupted, and to acquire ſo remarkably a reſolvent Acrimony, as totally to conſume the adjacent Veſſels, Membranes, Cartilages, and even the hardeſt Bones. Practical Authors abound with Obſervations of this Kind. But whilſt the Blood continually acts on that corrupted Subſtance lodg'd in the Sack of the expanded Aneuryſm, a putrid Cacochymy begins to be form'd; and hence an hectic Fever, gradually conſuming the Body, ariſes. That large Aneuryſms have terminated in this manner, is certain from Experience, unleſs by a Suffocation of the Circulation, or a Rupture of the Aneuryſm, the Patients died before the Contents of the Sack acquir'd ſuch a Degree of Malignity.

There is Danger of inſtantaneous Death from the Rupture of ſuch an Aneuryſm; for by this means the Patients die in a Moment, when they leaſt expect it. Of this there is a memorable Inſtance in *Mem. de l'Acad. des Sciences, l'An.* 1733.

When an Aneuryſm happens in the internal Parts of the Body, there is but ſmall Hope of a Cure; all that can be done is, by weakening Life by means of Veneſections, and a ſlender Diet, to diminiſh the Impetus and Velocity of the Circulation: For thus the Increaſe of the Aneuryſm is as much as poſſible prevented. The greateſt Reſt both of Body and Mind, are, alſo, to be order'd, for the ſame Purpoſe. When there is Acceſs to the Hands, if the Aneuryſm has not already grown to a great Bulk, ſomething may be hop'd from a prudent Compreſſion; in which it is to be obſerv'd, that it is at the ſame time greatly expedient, gently to compreſs the Artery above the Aneuryſm: Thus the Impetus of the Blood thro' the Artery is diminiſh'd, and when the Aneuryſm is compreſs'd the Blood will not ſo eaſily regurgitate to the Heart. When nothing is to be expected from Compreſſion, or when it has been us'd in vain, the Extirpation of the Aneuryſm is the only Method remaining, which may be happily inſtituted, as we learn from Experience. *Ruyſch*, in *Obſ. Anatom. Chirurg. Centur. Obſ.* 2. gives us an Inſtance of this Kind, in which the Event was happy, tho' the Arm was already ſeiz'd with a Gangrene.

To this we may, alſo, refer an Aneuryſm of the Heart, together with its Origin, Signs, and Effects. An Aneuryſm of the Heart is a preternatural Dilatation of its Cavities. This Diſorder frequently occurs in Practice, tho' it has not hitherto been very accurately deſcrib'd. We may eaſily conceive, that

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all thoſe Misfortunes may happen to the Heart, which produce Aneuryſms of the Arteries when their exterior Coats are deſtroy'd or weaken'd by Wounds, Contuſions, Diſtractions, or Corroſions. For Obſervations made on Carcaſes evince, that Wounds have penetrated to the Heart; and that Inflammations, Suppurations, and Eroſions, have been found in it. A memorable Inſtance of this occurs in *Act. Phyſ. Med. Tom.* 2. But beſides theſe Cauſes, other Circumſtances occur, from which a preternatural Dilatation of the Heart frequently ariſes: For the Action of the Heart conſiſts in forcing the Blood receiv'd from the Veins into its Cavities, into the Arteries; ſo that, by every Contraction of the Heart, its Cavities are totally evacuated: The Force of the Heart muſt, therefore, ſurpaſs the Reſiſtance of the Arteries. But if this Reſiſtance is ſo far increas'd as to ſurmount the Force of the Heart, that Organ cannot be totally evacuated; but the Blood being gradually accumulated in its Cavities, will dilate them. In the Heart is obſerv'd a ſurpriſing Property, by which, even after Death, it is excited to Contraction, by forcing Air, or tepid Water, thro' the Veins into its Cavities: Hence, when the Blood is not totally expel'd from its Cavities, the irritated Heart is frequently contracted, ſo as to expel its Contents, as appears evidently at the Point of Death, when the Heart is no longer able to expel the Blood into the Arteries: For then the Heart palpitates very quickly, till, being overcome by an invincible Obſtacle, it at laſt ceaſes totally; but whilſt the Heart endeavours, by its ſtrong and frequently-repeated Efforts, to overcome the Reſiſtance of the Arteries, the Fibres conſtituting the Sides of the Cavities of the Heart are ſtrongly diſtracted, whilſt the Fluid contain'd in the Cavities of the Heart, not capable of being expreſs'd, is compreſs'd, and makes as great a Reſiſtance as the hardeſt Body. Hence the Coheſion of the too much diſtracted Fibres of the Heart is weaken'd, and conſequently the Dilatation of its Cavities is augmented.

Hence it is obvious that ſlight Cauſes are ſufficient to render the Heart aneuryſmatical: For whilſt the Force of the Heart is able to ſurmount the Reſiſtance of the Arteries, its Cavities remain in their natural Dimenſions; but as ſoon as the Reſiſtance of the Arteries begins to prevail over this Force of the Heart, its Cavities will begin to be dilated.

This Dilatation may happen either in the Right Cavity alone, when the free Circulation of the Blood thro' the pulmonary Artery is hinder'd; or it may happen in the Left Cavity of the Heart, when there is any Impediment in the Aorta; or when both theſe concur, a Dilatation will happen in both Cavities of the Heart. But it is to be obſerv'd, that an Impediment in the pulmonary Artery may produce a preternatural Diſtention of the Right Cavity of the Heart, whilſt the Left Cavity retains its proper Dimenſion; but when the Left Ventricle is not able to expel its Blood, the pulmonary Veins cannot empty themſelves into it: Hence neither can the pulmonary Arteries convey their Blood to the pulmonary Veins; by which means the Reſiſtance to the Right Ventricle will be increas'd, ſo that it may be dilated by the ſame Cauſes. The Right Ventricle, which is far weaker than the Left, more eaſily yields to diſtending Cauſes: Hence all other Circumſtances being alike, it will be more frequently diſtended, and dilated to a larger Capacity.

Many Obſervations evince, that in Carcaſes the Heart has been found thus dilated, memorable Inſtances of which occur in the *Medical Eſſays*, *Vol.* II. *Hiſt. de l'Acad. des Sciences l'An.* 1735. and *Lanciſi de Subitaneis Mortibus.*

Every thing therefore which increaſes the Reſiſtance to the Blood forc'd from the Cavities of the Heart may produce a preternatural Dilatation of it; too great a Quantity of Humours in plethoric Perſons, an Increaſe of the Circulation in acute Diſeaſes, an Obſtruction of the Blood thro' the Extremities of the Arteries by an inflammatory, atrabiliarious, or polypoſe Condition, Faults of the Arteries, by which the Blood cannot paſs freely thro' them, ſuch as their exceſſive Calloſity, their Degeneracy into a cartilaginous, or even a bony Subſtance, and Aneuryſms of them, are the principal Cauſes why the Cavities of the Heart are diſtended beyond their natural Dimenſions. It, alſo, happens, tho' rarely, that Air contain'd in the Cavities of the Heart ſurpriſingly diſtends them. An Inſtance of this is found in *Ruyſch. Epiſt. Problem.* 16. In this Caſe perhaps the Blood, by an intenſely quick animal Motion, or by Diſeaſes, ſends off its contain'd Air, which being collected in the larger Cavities, and rarefy'd by Heat, diſtends all the Parts.

That this Misfortune is preſent, or at leaſt to be dreaded, may be known, if continual Palpitations of the Heart are preſent; if the Signs evince that the Lungs are ſo obſtructed as not to allow a free Paſſage for the Blood; if the Pulſe is very hard and full, with an intolerable Anxiety upon an Increaſe of Motion; then we juſtly conclude that ſuch an Obſtacle is lodg'd in the Aorta.

Then the Circulation is ſurpriſingly diſturb'd, and ſo various and aſtoniſhing Phenomena appear, as ſeem to ſurpaſs the Laws of Nature; the Pulſe is in every reſpect unequal, ſometimes defective, and immediately after ſtrong and briſk; Reſpiration becomes highly difficult, and Convulſions are often produc'd, whilſt the Heart is at Reſt, and immediately after contracted by a violent Spaſm; thus for a Moment the Motion of the Blood thro' the Arteries of the Brain ceaſes, and immediately after is mov'd with the greateſt Velocity; by which means the Secretion and Motion of the Spirits are greatly diſturb'd; all the Senſes, both external and internal, are often diſturb'd; there is an intolerable Anxiety; and there is a violent Struggle between Life and Death, till the latter puts an End to the Patient's Miſery.

Hence it appears why, after a long-continu'd Aſthma, and violent inflammatory Diſeaſes of the Breaſt, ſuch terrible Diſorders often remain.

When this Diſorder is once form'd, no Recovery can be hop'd for, ſince a Weakneſs of the Heart being at the ſame time produc'd, the Difficulty of removing the Obſtacle is increas'd: Hence the terrible Diſeaſe is augmented, together with all its Symptoms, eſpecially if Life is pretty vigorous.

The Whole of what can be done by Art is, for ſome time to prevent the Increaſe of the Diſorder, and by that means render Life more tolerable than it would otherwiſe be: This is done by keeping the Patient ſo eaſy and quiet, that the Motion of the Heart may not be greater than is abſolutely neceſſary to the Continuation of Life. Hence great Reſt, both of Body and Mind, is requiſite; great Quantities of thin Fluids ought, alſo, to be drank, the beſt of which are Whey, Milk, and Water, edulcorated with Honey, and Spaw-waters mix'd with Milk; but the Aliments ought to be mild, thin, and exhibited in ſmall Quantities at proper Intervals, that only a ſmall Quantity of mild Chyle may be mix'd with the Blood. All ſtimulating Subſtances are, alſo, to be carefully avoided, and ſuch Medicines uſed as dilute the Blood, open the Veſſels, and lubricate the Paſſages; that there may be a quick and expeditious Circulation of the diluted Humours through the lubricated and opened Veſſels.

If by the ſame Cauſes an Artery wounded in the like manner, remains infirm after the Cure, the ſame Misfortunes happen.

When in the moſt violent Diſeaſes, and obſtinate chronical Pains, eſpecially of the Head, Surgeons open the temporal Artery, they are always careful, after a proper Quantity of Blood is diſcharged, ſo to ſecure the Wound of the Artery, by a Plate of Metal, or ſomething of a like Nature, that the Force of the Blood diſtending the Artery at each Pulſation of the Heart, may not extend the Rudiments of the beginning Cicatrix beyond the equable Dimenſion of the Artery, and produce an Aneuryſm: And if this Compreſſion of the wounded Artery is neglected, ſuch a Misfortune will almoſt always happen. This is frequently obſerved when unluckily in the Flexure of the Cubit, the adjacent Artery is opened with the Vein, and the Wound not ſecured by a proper Preſſure; which is, alſo, far more difficultly obtained here than in the Temples, where the wounded Artery may be ſo preſſed to the hard Cranium, that no Dread of a future Aneuryſm remains. Hence in this Place, eſpecially, we may ſafely inſtitute Arteriotomy, which is perhaps too much abſtain'd from by Phyſicians, tho' it may be ſafely perform'd by a ſkilful Surgeon; and, as *Severinus, de Efficac. Medic. Lib.* 1. *Part* 2. evinces, has often removed Diſorders, after all other Means have been tried in vain.

When from the ſame Cauſes all the Coats of the Artery are deſtroyed together, and the Artery pours out its Fluids into the adjacent diſtended Parts, from whence it can find no Paſſage, there is formed a Collection of extravaſated Blood, which is perpetually increaſed, and without any determinate Meaſure. This Tumor is ſoft, has ſcarcely any Pulſation, is livid, does not diſappear by Compreſſion, ſoon putrefies, and by that means cauſes a Gangrene of the neighbouring Parts. This is a ſpurious Aneuryſm, the Cauſe, Signs, and Effects, of which, are known by this Deſcription.

If an Artery is ſo wounded that the Coheſion of its Sides, being deſtroy'd, the Blood contain'd in its Cavity may be diſcharg'd, whilſt this Blood is pent up by the entire Skin, or Fat, or Blood coagulated in the Wound; it will make a Way for itſelf in the *Membrana Adipoſa*, which it will fill, and often raiſe to a large Tumor: For the diſtending Maſs will be increaſed by the Blood continually flowing from the ruptured Artery, till the Skin can yield no farther, or the adjacent Parts hinder the farther Collection of the Blood in the *Membrana Adipoſa*, or a Thrombus of coagulated Blood cloſes up the Aperture of the wounded Artery. After violent Contuſions, ſuch large Tumors often ariſe, and are of a livid, and often of a totally black Colour, in conſequence of the extravaſated and

coagulated Blood appearing through the Skin. In ſcorbutic Patients, after the Veſſels are corroded, the like Misfortunes often happen; but as this generally happens in the ſmaller Arteries, the Part is not raiſed to a very great Tumor, but flat black Spots are form'd. That enormous Tumors are, however, ſometimes produced by this Cauſe, is certain from an Inſtance recorded in *Severinus de Efficac. Med. Lib. 1. Part. 2.* which Obſervation evinces how large a Quantity of Blood may be collected in the *Membrana Adipoſa*, and how long it may remain without Corruption after it is extravaſated, provided a free Acceſs is not given to the Air.

Becauſe ſuch a Tumor has ſome Signs in common with a true Aneuryſm, Surgeons have given it the ſame Appellation, tho' for the ſake of Diſtinction they have given it the Epithet of ſpurious; for in a true Aneuryſm the Coats of the Artery, tho' weakened, remain coherent, and hinder the Diſcharge of the Blood; but in a ſpurious Aneuryſm the ruptured Coats afford a free Paſſage for the Blood. The Antients uſed a leſs ambiguous Word, and called ſuch a Diſorder *Ecchymoſis*, which, according to *Galen*, in *Method. Medend. Lib. 4. Cap. 1.* generally happens with a Contuſion and Rupture of the Veſſels; tho' he, alſo, tells us, that it ſometimes happens from an Anaſtomoſis, a Tranſudation, or a Corroſion. Small Tumors, ariſing from extravaſated Blood under the entire Skin, are ſtill ſo called by Surgeons: And if from the Laceration of a large Artery a conſiderable Tumor is produced, eſpecially if any Pulſation is perceived in it, it is generally called a ſpurious Aneuryſm.

So far as I know, no mention is made of an Aneuryſm in *Hippocrates*; and that Definition of an Aneuryſm given by *Galen*, in *Tr. de Tumoribus præter Naturam, Cap. 11.* ſeems rather to agree with what we call a ſpurious Aneuryſm. For he tells us, "That the Diſorder of an opened Artery is called an "Aneuryſm. This happens when the Artery, being wounded, "the adjacent Skin is brought to a Cicatrix, whilſt the Wound "of the Artery is neither united, covered with a Cicatrix, nor "ſtop'd by Fleſh." But the Signs by which he diſtinguiſhes this Diſorder from other preternatural Tumors, rather agree with a true Aneuryſm. For he adds, "Diſorders of this Kind are "known by the Pulſations of the Arteries; and when they are "compreſſed, the whole Tumor diſappears, the Subſtance pro-"ducing it returning into the Arteries; and this Subſtance is a "thin yellow Blood mixed with a large Quantity of fine Spi-"rits. But this Blood is much hotter than that contained in "the Veins, and when the Aneuryſm is wounded, burſts out "with ſuch Violence, that it can hardly be ſtopt."

The Cauſe, therefore, of a ſpurious Aneuryſm, may be every thing which deſtroys the Continuity of the Sides of an Artery, whilſt the Skin remains entire; or in caſe there is a Wound, whilſt the Aperture of the Skin is ſo cloſed up as to hinder the free Evacuation of the extravaſated Blood: Hence, being congeſted in the *Tunica Celluloſa*, it diſtends the Part by a Tumor.

It is of great Importance to diſtinguiſh between a ſpurious and a true Aneuryſm. Hence their reſpective Signs ought to be accurately known. We know that a ſpurious Aneuryſm is preſent, from the preceding Cauſes, eſpecially violent Contuſions, becauſe the Tumor increaſes far more quickly in a ſpurious than in a true Aneuryſm. Beſides, the Tumor is not circumſcribed by very diſtinct Limits, becauſe it is every-where diſperſed thro' the *Tunica Celluloſa*; but in a true Aneuryſm the Circumference of the Tumor is limited by the dilated Coats of the Artery: Add, that a true Aneuryſm, at leaſt in the Beginning, before it grows to a great Bulk, has a manifeſt Pulſation correſponding to that of the Arteries; whereas a ſpurious Aneuryſm has not ſo manifeſt a Pulſation, tho' this Sign is ſometimes fallacious, as is obvious in the Inſtance referred to in *Severinus*. A true Aneuryſm, unleſs very large, totally diſappears when preſſed, becauſe the Blood is forced into the Cavity of the Artery; but this does not happen in a ſpurious Aneuryſm, which when preſſed, yields indeed, but the Tumor is then augmented in the adjacent Parts. In a true Aneuryſm, at leaſt in the Beginning, the Colour of the Skin is rarely or ever changed; whereas in a ſpurious Aneuryſm, the Blood extravaſated under the Skin tinges it with a preternatural Colour.

The principal Effects of a ſpurious Aneuryſm are, that the extravaſated Blood, by its Bulk, hinders the Action of the adjacent Parts, and at laſt, by its Continuance, becoming corrupted, may acquire ſuch an Acrimony as may produce the moſt violent Inflammations, Gangrenes, and Corroſions. But if the Acceſs of the Air is hindered, the extravaſated Blood may remain long incorrupted, eſpecially if antiſeptic Fomentations are applied. For the Cure of this, and other Diſorders of a like Nature, ſee CONTUSIO.

Other Effects of a large wounded Artery are eaſily underſtood, from Phyſiology; as, alſo, the Phenomena of a Nerve wounded.

All theſe are before explained.

But that the Cauſe may appear plain of thoſe ſurpriſing Effects which ariſe from a Puncture, or partial Diviſion of the Nerves; the following Conſiderations, from Anatomy and Theory, are to be adverted to.

Nothing is more ſurpriſing in medicinal Obſervations, than that in the ſoundeſt Perſon the gentle Puncture of a Nerve ſo diſturbs all the Parts of the Body, that nothing of his former Health remains: For intenſe Pain, an acute Fever, *Deliriums*, violent Convulſions, Inflammations and Suppurations, a Gangrene, and ſometimes Death, ſucceed a very ſlight Wound of the Nerves: Beſides, it is certain from Experience, that very inconſiderable Changes induced on the Nerves, ſometimes ſurpriſingly diſturb all the Actions of the Body.

Thus tickling the Soals of the Feet produces great Changes in the Body; for almoſt all the Muſcles and Tendons of the Body are forthwith agitated, Laughter is forcibly extorted, and the Strength immediately deſtroyed. There have, alſo, been Inſtances in which Convulſions and Death have been produced by ſo ſlight a Cauſe, and even a feigned Attempt to produce this uneaſy Titillation has produced the like Phenomena, in Perſons who have before experienced it. The ſimple Agitation of a Feather in the Nares or Fauces, the Crawling of Worms in the Stomach, or the Fluctuation of Phlegm, thereby inducing a ſlight mechanical Change on the Nerves diſperſed thro' theſe Parts, greatly diſturb the whole Body.

Tho' from the hitherto known Structure of the human Body the ſurpriſing Effects ariſing from a Change of the Nerves in the human Body cannot be accounted for; yet from ſuch a Knowledge we acquire great Light in thoſe Diſorders which ſucceed Wounds of the Nerves. Hence we are from Anatomy and Theory to conſider the following Things:

Every viſible Nerve is a Congeries of ſmaller Nerves mutually connected by extremely fine Membranes, Arteries, and Veins, with interwoven Lymphatics, and then all covered with a common Membrane.

Thro' all theſe Veſſels compoſing a Nerve, their proper Liquid flows perpetually from the Heart, *Cerebrum*, *Cerebellum*, and *Medullæ Spinalis*. Theſe Veſſels have always a conſiderable contractile Force.

As for viſible Nerves; we have only treated of ſuch as can be viewed by the Eye: For, as is already obſerved, Anatomiſts have found that theſe may be ſeparated into other ſmaller Nerves, which are ſtill ſo many Congeries of Nerves as yet ſmaller. *Leuwenhoeck*, in *Tom. 3. Epiſt. 36.* informs us, that he found a Nerve no larger than an Hog's Briſtle to conſiſt of at leaſt thirty other Nerves, each of which was covered with its proper Membrane: He afterwards obſerved the ſame thing in far ſmaller Nerves. He, farther, obſerved minute and tender Blood-veſſels running between theſe nervous Fibrils. Anatomical Injections, eſpecially in young Carcaſes, ſufficiently evince, that a large Number of Veſſels run thro' the Subſtance of the Nerves; all viſible Nerves, therefore, derive the ſmalleſt Part of their Bulk from the nervous Subſtance properly ſo called, which draws its Origin from the medullary Subſtance of the *Cerebrum* and *Cerebellum*, collected into the *Medulla Oblongata*, and ſpinal Marrow. Slender Coats covering the ſmall Fibrils, connecting Membranes, and Veſſels of all Kinds diſperſed thro' them, conſtitute the principal Part of every viſible Nerve: Thus theſe inconceivably tender Veſſels are defended, and ſafely conveyed to thoſe Parts of the Body, where, laying aſide their thicker Coats, they ought to perform the Functions of Nerves. The optic Nerve, furniſhed with Coats from both Membranes of the Brain, in its Courſe appears tough and firm; but when, laying aſide its Coats in the Bottom of the Eyes, it is expanded on the Retina, it is ſo ſoft, that unleſs it was ſuſtained by the equable Preſſure of the circumambient Liquid, it would fall into a kind of ſhapeleſs Mucus. But it is certain, from anatomical Injections, that numberleſs arterial Veſſels run thro' the Middle of the Retina.

All the Veſſels which conſtitute a viſible Nerve, receive proportional Liquids propel'd by the Force of the Heart and Arteries; nor are we to doubt the Exiſtence of thoſe ſmall Veſſels which conſtitute the Coats covering the nervous Fibrils, ſince anatomical Injections evince, that arterial Ramifications convey the impell'd Fluids thither. But that the Nerves themſelves, properly ſo call'd, are pervious, and that there is a perpetual Motion of a ſubtile Liquid thro' them, cannot be demonſtrated to the Senſes: But if we conſider that the medullary Subſtance of the *Cerebrum* and *Cerebellum*, which is all continuous to the cortical and vaſcular Subſtances, is ſpent in conſtituting the nervous Fibrils, and is continuous to them; that ſo large a Quantity of the pureſt arterial Blood is convey'd to the

the Brain; that when the medullary Substance of the *Cerebrum* and *Cerebellum* is either destroy'd or compress'd, the whole Function of the Nerves arising thence is abolish'd; that when the Nerves are ty'd in their Course, all their Action is destroy'd under the Ligature, but remains entire above it, it will be sufficiently obvious that the nervous Fibrils receive an highly subtile Fluid secreted by the Fabric of the *Cerebrum* and *Cerebellum*, and convey it, during the Whole of Life, thro' highly-distinct Canals, to all the Parts of the Body; that the different Operations of Sensation and Motion may be perform'd.

Every wounded Nerve, therefore, suffers, not only as it is a Nerve, but, also, because it contains all Kinds of Vessels, the Soundness of which, and their Action depending upon it, is injur'd by the Wound.

But because in their Origin from the medullary Substance of the Brain, the nervous Fibrils, being distinct, are in their Course cover'd with their proper Membranes, and thus remain separated from their adjacent Fibrils; and as the whole Congeries of Nerves constituting the visible Nerve is cover'd with a pretty thick Coat; *the Reason is obvious, why every visible Nerve* appears tough and hard, tho' that which is properly call'd a Nerve arises from the soft Pulp of the Brain. The whole Contractility, therefore, of a visible Nerve, by which its divided Extremities retire from each other, depends on the Coats covering the nervous Fibrils, and the Vessels dispersed th- o' them.

When therefore the Parts of a Nerve are intirely cut thro' and divided, they recede from the Place of the Wound, towards the fix'd Parts to which they are connected, and hide themselves in the surrounding Solids, by which they are compressed; and by this means their own Orifices, and those of their Vessels, are closed; so that no other Damage happens, besides what is already mention'd.

If such a Nerve as is describ'd in the preceding Aphorism is intirely divided, the Coats covering all the Fibrils, as, also, the Covering surrounding the Whole of them, collected together by their Elasticity and Connection with the other Parts, are retracted on both Sides: But as considerable Arteries, when divided and retracted, are by the Pressure of the adjacent Parts, under which they are lodg'd, and their own Contractility, so closed up, as to discharge no Blood, it is sufficiently obvious, that the tender nervous Vessels, and those distributed thro' their Coats, are forthwith closed, and can no longer transmit the Humours convey'd to them. All the Functions, therefore, which depend on the Soundness of these Vessels, will be destroy'd, and the Symptoms before-enumerated will happen.

If a Nerve is cut, or prick'd, in such a manner that some of the small Fibres are dissolv'd which compose the large Nerve when united, the dissolv'd Parts receding, will draw the smallest Fibres which connected the small Nerves to each other, and to the Vessels; from whence there will arise a perpetual and slow Laceration, and therefore a very great, acute, and continual Pain: But the Parts still cohering, will alone sustain the Force which the entire Nerve sustain'd before. They will therefore be more distracted and lacerated, and consequently afflicted with a more acute Pain. By their Distraction they will, also, be so compressed, as to prevent the Circulation of their Fluid. When the one Part divided, and the other cohering, are thus affected, the intermediate Vessels are compressed; hence the Blood, Lymph, and Spirits, are compressed, acted upon, and accumulated; for which Reason there is an Inflammation produc'd by the Blood, Lymph, and Spirits, about the Parts.

Hence the adjacent Nerves and Tendons, together with their Coats, as, also, the Muscles and Vessels, are stretch'd, constricted, and convulsed; by which means the Membranes of the *Cerebrum*, *Cerebellum*, and spinal Marrow, are contracted and vellicated, and the Action of the Brain is disturb'd.

Hence naturally follows a Series of all the Phenomena before enumerated.

If a visible Nerve, consisting of many small Nerves, cover'd with their proper Coats, and inclosed in a common Membrane, is so wounded, that some of these nervous Fibrils, by their Union constituting the large Nerve, are divided, whilst others remain entire, all those Functions will be destroy'd which depended on the Soundness of those Fibrils, whose Cohesion is now abolish'd. Besides, as has been already observ'd, these separated Extremities of the Fibrils will more recede from each other: But this cannot happen without a Distraction and Laceration of the slender Membranes connecting the nervous Fibres mutually applied to each other, and thus an acute and continual Pain will be produc'd. But the Fibrils left intire, will now alone sustain all that Force which before they bore united, whilst by the various Actions of the Muscles, the Flexions and Extensions of the Joints, and the Pulsations of the Arteries, the Situation of the Parts is chang'd: They will, therefore, be necessarily more distracted; whence an intense Pain will, also, be produc'd. For if we suppose an intire Nerve to consist of an hundred nervous Fibrils collected into one Congeries, and that by a Wound fifty of these are divided, the remaining entire fifty will be more than doubly distracted by the same Causes; because half of the Cohesion, by which they resisted the distracting Causes, is remov'd: It is shewn under the Article OBSTRUCTIO, that every Cause which distracts and lengthens the Vessels, lessens their Capacities, and may consequently produce an Obstruction; whence numberless Misfortunes may arise. Thus we begin to perceive what Misfortunes arise from Nerves wounded, but not intirely divided; for the divided Parts receding on both Sides, will contract the Orifices of the divided Vessels, and hinder the free Passage of the Humours thro' them. The Fibrils, as yet cohering, are less able to resist the distracting Causes; hence they will be elongated, and lessen the Diameters of their Vessels: By this means the free Circulation of the Humours thro' those Vessels will be hinder'd; and by the Impetus of the succeeding vital Fluid on the obstructed Places, an Inflammation will be produc'd, not only in the large Blood-vessels, but the same may, also, happen in the other decreasing Series of Vessels, as far as those of the smallest, that is, the nervous Kind. What enormous Symptoms may happen from this, is evinc'd by the Gout, the Rheumatism, and arthritic Pains; in which Disorders an Inflammation of the tender Vessels produces the most racking Tortures: But an Inflammation once form'd, may be succeeded by all its different Terminations, which are very various, according as the Inflammation is in larger or smaller Vessels. After a Phlegmon, a mild Suppuration happens: An exulcerated Erysipelas in the small Vessels, discharges a thin ichorous Fluid: A true Rheumatism never suppurates; and a Gout lodg'd in the most subtile nervous Vessels, consumes the most solid Parts into a kind of Calx. Hence numberless other Misfortunes may arise.

As for the adjacent Nerves; such is the Frame of the human Body, that when one small Nerve is wounded, the adjacent Parts, and sometimes those considerably distant, are affected. When the external hard Crust of a Tooth, being divided or corrupted, lays bare the tender nervous Fibrils dispersed thro' the Substance of the Tooth, the Access of the cold Air alone afflicts with an intolerable Pain, not only the affected Tooth, but, also, the whole Side of the Head in which it is fix'd: So that the adjacent Parts are frequently raised to a considerable Tumor. But when the pain'd Nerve is destroy'd, by the Application of Alcohol, or the Extirpation of the Tooth, all the Pain ceases. In *Hildanus*, and other practical Authors, there are various Instances in which the slight Puncture of a Nerve or Tendon, has not only immediately affected all the adjacent Parts, but, also, so far disturb'd all the Functions of the Body, as sometimes to induce Death. But whether the Propagation of a Disorder in one Nerve to all the adjacent Nerves, and to the Brain, happens by a Continuation of the Membranes covering the Nerves, and which are esteem'd Productions of the Meninges; or whether it happens from the Irritation of the nervous Substance, properly so call'd, and which arises from the medullary Substance of the Brain, we shall not here dispute: It is sufficient for our Purpose, that, after Wounds of the Nerves, these Misfortunes ensue, and perhaps both these Causes may concur to their Production. Thus the Membrane lining the Pelvis of the Kidneys is, by a continu'd Course, convey'd to the Ureters, Bladder, and *Urethra*; and when a sharp Stone, lodg'd in the narrow Part of the Pelvis, vellicates this internal Membrane, a Pain, and troublesome Strangury, are often perceiv'd in the Extremity of the *Urethra*. When, in Venesection, the tendinous Membrane covering the Muscles of the *Humerus* and *Cubitus*, is wounded by the Point of the Lancet, soon after Pain, Inflammation, and other terrible Symptoms, are produc'd throughout this whole Membrane.

He who compares the Phenomena before-mention'd with what has been said in this and the two preceding Aphorisms, will easily see why so many, and so terrible Disorders, are produc'd by Wounds of the Nerves.

Hence, also, we understand what Sort of Puncture, Laceration, or Wound of a Nerve, is so dangerous, and why; as, also, why the same Things happen, with respect to Tendons, Membranes, and many Kinds of Vessels.

The more tense the Nerve is, and the fewer Fibres of the wounded Nerve remain entire, the greater their Distraction will be, the more violent Symptoms will be produc'd, and the more intense Pain will be present: But such terrible Disorders do not accompany a Nerve, which is by no means tense, and which is entirely divided. But that the like Misfortunes should happen to the Membranes, is not surprising, since they have many Nerves dispersed thro' their Substance; as, also, to the Tendons, which being

Continuations of the muſcular Fibres, and conſequently ſeem to ariſe from the Nerves, as has been already obſerv'd. The ſame will, alſo, happen in the Veſſels form'd of a Convolution of the Membranes; thro' which, alſo, are diſſeminated the Nerves ſubſervient to Senſation, Motion, and Nutrition.

Having already treated of the Definition, Cauſes, Effects, Diagnoſtics, Prognoſtics, and other Circumſtances, of a ſimple Wound; it now remains that we conſider its general Cure.

In order, then, to the healing of a Wound, it is neceſſary,

Firſt, To take away whatever being left there, hinders its Union, whether it proceeds from the Liquids and Solids corrupted, from the wounding Inſtrument, or any other Cauſe.

Secondly, To ſupply what is loſt by a Regeneration of what is taken away.

Thirdly, To unite the ſeparated Parts, and keep them in Union.

Fourthly, To form a Cicatrix as like as poſſible to the natural Skin.

A Cure is ſuch a Change of a Living Body, as removes that Condition which is call'd a Diſeaſe, and reſtores that the Removal of which produc'd the Diſeaſe. But a Wound is a recent and bloody Solution of Continuity in ſoft Parts, made by an hard and ſharp Body. The Cure, therefore, of a Wound, is the Reſtitution of the natural Coheſion of the Parts ſeparated by the wounding Cauſe. Now whether there is a ſimple Diviſion of Parts, before cohering; or whether there is a great Loſs of Subſtance, made by the wounding Cauſe, the remaining Life in the Patient, by an inimitable Artifice, unites what is ſeparated, and reſtores what is loſt. Phyſicians and Surgeons remove whatever can hinder this ſalutary Effort of Nature, and ſupply what can aſſiſt it; and this is all that Art can do. Let thoſe who think they can do more, attempt the Conſolidation of the ſlighteſt Wound in a Carcaſe; let them apply the moſt celebrated vulnerary Balſams, and cheriſh the Part with an Heat equal to that of a ſound Body; and ſtill the Event will evince, that the Nature of a created Body is alone ſufficient for a Cure, and that, without that Nature, nothing can be produc'd by Art. In the following Numbers are recounted all thoſe Things which are always requiſite to the Cure of Wounds.

1. Every thing lodg'd in a Wound of a Nature foreign to the Parts of the human Body, can never adhere to them, and will, ſo long as it remains there, always hinder the Union of the ſeparated Parts. When the elevated Skin is divided by the Lancet, and a Ball of pure Gold put into the Wound, its Lips will never unite; but, for many Years, there will remain an Ulcer, daily diſcharging Pus: But if that foreign Body is remov'd, its Lips, unleſs become quite callous by their continual Attrition with the hard Body, will in a few Days be conſolidated. It is no matter whether that foreign Body is a Part of the wounding Inſtrument, or ſomething elſe, which has penetrated the Wound along with it; or whether the extravaſated Humours, or ſolid Parts, are ſo chang'd by the wounding Cauſe, as to loſe thoſe Properties requiſite to their being again united to the live Parts. In Battles, Balls diſcharg'd from Guns, when they penetrate the Cloths, often carry into the Wounds large Portions of the Cloths; by which means the Conſolidation of ſuch Wounds is often protracted for ſeveral Months, and often for ſeveral Years. A memorable Inſtance of this occurs in *Memoires de l'Acad. Royale des Sciences, l'An.* 1731. It is therefore obvious, that ſuch Things are, if poſſible, to be remov'd.

2. If a Wound is accompanied with great Loſs of Subſtance, the Lips cannot be united and conſolidated till the loſt Subſtance is reſtor'd by a new Regeneration; for they are, as yet, too far diſtant from each other: And tho' they ſhould be forcibly brought into Contact by Suture, or adheſive Plaiſters; yet under the united Lips there would ſtill remain a Cavity, in which the extravaſated Humours would be collected, and form a ſinuous Ulcer.

3. The Parts of the Body between which the wounding Cauſe is forced, gradually recede more and more from each other; but that a Wound may be cur'd, it is requiſite the ſeparated Parts ſhould be again render'd contiguous. Here Art aſſiſts Nature, by uniting the ſeparated Parts, and ſo fortifying them, that they may remain in that State.

4. But this cannot often be done when a ſtrong Suppuration has conſum'd a large Portion of the *Membrana Adipoſa*; or when a conſiderable Quantity of the Skin is carried off by the Wound: For, in this Caſe, the Cicatrix is always more ſolid, ſmooth, and ſhining, than the adjacent Skin.

Theſe are the general Intentions to be purſu'd in the Cure of all Wounds; and how theſe Intentions may be obtain'd, ſhall be hereafter ſpecified.

Impacted Fragments of Metals, Stones, Wood, Glaſs, Balls diſcharg'd from Guns, Thrombuſes of Blood, mortified Fleſh or Membranes, and broken Bones, are firſt of all to be remov'd, if they are diſcover'd.

Such Caſes frequently occur in modern Battles, when warlike Machines, loaded with various Fragments of Stones and Metals, are exploded upon the Enemy, and render the Cure of the Wounds highly difficult: All theſe, if left in a Wound, when the Wound begins to ſwell, and be inflam'd, contuſe the Parts they touch, render them callous, augment the Inflammation, and at laſt make them degenerate into fiſtulous Ulcers, not to be cur'd unleſs they are extracted by Art, or diſcharg'd by a Suppuration excited in the adjacent Parts. The ſame Caution is to be obſerv'd, if Thrombuſes of concreted Blood, or ſolid Parts of the Body, cut off, and remaining free from all Connection with the live Parts, are lodg'd in the Wound: But if the Fragment of a Bone as yet coheres with the live Parts, there is ſome Hope that it may be again united with them: But it is to be always obſerv'd, that if the Extraction of ſuch foreign Bodies, lodg'd in a Wound, cannot be made, without the Dread of more terrible Misfortunes, then they are rather to be left, and their Separation committed to Nature.

But how we may determine whether they are to be remov'd, or left, will be ſhewn in the next Aphoriſm.

We are to judge whether any Body is to be left, or taken away, by conſidering the Nature of the Wound, of the wounded Part, of the impacted Matter, the Strength of the Patient, and the Symptoms that will follow.

In Wounds, eſpecially thoſe of a dangerous Kind, great Caution is requiſite, in determining whether foreign Bodies, lodg'd in the Wound, are to be remov'd, or left: If after a due Conſideration of all Circumſtances, it appears that the Patient will, by an Extraction of ſuch Bodies, live more commodiouſly, or longer, then they are certainly to be remov'd: But if from Anatomy, and the Functions injur'd, the Condition of the Wound appears ſuch, that certain and ſud'den Death is juſtly to be dreaded, they are to be left, leſt the ſucceeding Death of the Patient ſhould be imputed to the Phyſician or Surgeon: For it is prudent not to meddle with Patients whoſe Caſes are abſolutely deſperate. If the wounded Part cannot be reach'd with Inſtruments, in order to the Extraction of foreign Bodies lodg'd in it, ſuch Bodies are, in like manner, to be left. Thus, for Inſtance, foreign Bodies lodg'd about highly-tendinous Places, large Nerves, or the Brain itſelf, cannot be remov'd without the greateſt Danger. But ſome Bodies, according to the different Matter of which they conſiſt, may be more ſafely left in Wounds, than others. Thus numberleſs Obſervations evince, that leaden Balls have without any Inconvenience been lodg'd for many Years in the Body, and afterwards often made ſurpriſing Ways for their own Diſcharge: But if they had been made of Iron, or Copper, becoming corrupted by the Ruſt, they would have far more irritated the Parts they touch'd. We ought, alſo, to have a due Regard to the Strength of the Patient: For if the Weakneſs of his Pulſe, the Coldneſs of his Extremities, and the cadaverous Paleneſs of his Countenance, evince that his vital Strength is already much impair'd, we ought in Prudence to abſtain from ſearching the Wound with chirurgical Inſtruments: For ſurpriſing Inſtances evince, that foreign Bodies left in Wounds have afterwards ſpontaneouſly diſcharg'd themſelves, tho' they could not before be extracted without the greateſt Danger. A memorable Inſtance of this occurs in *Journal des Scavans, l'An.* 1735. *Avril.* Many other Obſervations occur in practical Authors, which ſufficiently prove that it is ſometimes expedient to leave foreign Bodies in Wounds, ſince they will afterwards be excluded by the Aſſiſtance of Nature alone.

From what has been ſaid we may determine the Inſtrument, and Manner by which ſuch foreign Bodies are to be remov'd.

We muſt firſt examine whether by the Wound made, a Part of the wounding Inſtrument left may be extracted, without a Dilaceration of the Parts; or whether the Wound ought to be dilated; or whether the Body may be more commodiouſly extracted, by making a freſh Wound in the oppoſite, or any other Part. Thus feather'd Darts cannot be extracted from the Wound they make, without a great Dilaceration of the adjacent Parts: Hence, in ſuch a Caſe, the Wound is rather to be dilated, or, if it is poſſible, the Dart is to be protruded thro' the oppoſite Part, after making a new Wound. Forceps, of various Bulks and Figures, are deſcrib'd by chirurgical Authors, for extracting foreign Bodies from Wounds; but they are not all at once, and with a great Impetus, to be extracted; ſince it is more expedient, after the Dart is laid hold of by the Forceps, gently to agitate it, in order to know whether in any Part it is ſo fix'd, that it cannot be extracted, without a great Dilace-

ration: For in this Caſe it is rather to be left. But ſince in Battles Gunpowder has been uſed, the Balls diſcharg'd from Guns could not be commodiouſly extracted by the Surgeon's Forceps; hence they invented other Machines, eſpecially a ſpiral Perforator, ſo conceal'd in a hollow Pipe, that it might be ſafely paſſed to the Bottom of the Wound, till it reach'd the Ball there lodg'd; then, by gently twiſting about the Perforator, they ſo fix it in the ſoft Lead, as to extract it.

After a Wound is depurated in this manner, if any thing is taken away from the Body, it ought to be reſtor'd, by a Regeneration of Matter ſimilar to that which was loſt. This comes to paſs,

Firſt, If the arterial, lymphatic, and nervous ſmall Veſſels, are in ſuch a Condition, as to receive and tranſmit their own laudable Liquids. And,

Secondly, If this laudable natural Liquid is carried into theſe Veſſels in a fit Quantity, and with a proper Impetus.

After all foreign Bodies are remov'd from a Wound, we are to conſider whether the Wound is ſuch, that only a ſimple Diviſion of Parts, before cohering, is made by the wounding Inſtrument; or whether ſome Part of the Subſtance of the Body is carried off by the wounding Cauſes. In the former Caſe nothing more is requiſite, but an Union of the ſeparated Parts; but in the latter it is neceſſary there ſhould be a Regeneration of the loſt Subſtance. Tho' it is commonly believ'd that Parts of the Body cut off will no more grow to the Parts to which they before adher'd, tho' applied to them, yet ſome Obſervations evince, that this is not always to be deſpair'd of. Inſtances of this are found in *Garengeot's Operat. de Chirurgie, Tom. 3.*

Obſervations of this kind prove the Poſſibility of *Taliacotius's* Method of reſtoring ſome loſt Parts of the Body; ſuch as Noſes, Ears, and Lips. An Inſtance of this kind is given by *Paré*, in *Lib. 23. Cap. 2.* and another by *Hildanus, Centur. 3. Obſ. 31.*

But ſuch Inſtances rarely occur; when, however, ſome Part of the Subſtance of the Body is carried away by a Wound, the adjacent Veſſels, being lengthen'd, by a ſurpriſing Artifice of Nature, again form or reſtore that which was loſt. But that this may be done, two Things are requiſite:

1. By the inevitable Effect of Life and Health, ſome Parts of the Body are neceſſarily loſt, and theſe are reſtor'd by the Aliments converted into our Nature by the Action of the Veſſels and Viſcera. There is therefore in a ſound Body, ſuch a Property, as enables it, from the ingeſted Aliments, to ſupply as much as was loſt, and of the ſame Qualities: But all this is perform'd by the vital Motion of laudable Humours thro' Veſſels that are ſound, and proportion'd to the Liquids. It is therefore requiſite the Veſſels ſhould have theſe Conditions, by which they may receive, convey, and return ſuch Liquids, as in Health flow'd thro' theſe Veſſels. Hence if, by too ſtrong Compreſſion, or powerful Deſiccatives, the Veſſels are too much contracted, the Surface of the Wound will become dry, and inflam'd; nor can the Veſſels tranſmit thoſe Fluids which, in Health, mov'd thro' them. If, on the contrary, the Wound is treated with too emollient Subſtances, the relax'd Veſſels will yield to the impel'd Fluids, and conſequently be dilated ſo as to admit Humours which ought not naturally to be in them; and the Veſſels, thus expanded beyond their natural Capacity, by their contain'd Fluids, will form fungous Fleſh, which will always retard the Cure of Wounds. The happy Reſtitution, therefore, of the Subſtance loſt by a Wound, ſo far as it reſpects the Veſſels, depends upon procuring a due Strength to thoſe Veſſels, ſo that they may neither too greatly reſiſt, nor too eaſily yield to the impel'd Fluids. But as, in order to reſtore the loſt Subſtance, all the Veſſels, conſtituting the Surface of a Wound, muſt be elongated; hence it will be expedient the Parts ſhould be kept a little more ſoft and relax'd, than in a natural State. When a Surgeon daily views the Surface of a Wound, he may ſee whether a greater or ſmaller Degree of Softneſs is requiſite to the Regeneration of what is loſt: For if the Surface of the Wound appears dry, and of a deep-red Colour; and if a little Pus is generated, he immediately knows that the Veſſels in the Surface of the Wound too ſtrongly reſiſt the impel'd Liquids, ſo as not to tranſmit them: But if, in every Point of the Wound, an equable Humidity, and moderate Heat, appear; if the Bottom of the Wound begins daily to be equally elevated, and its Sides equally extended to the Centre, he ſufficiently perceives that the Veſſels have a due Degree of Laxity, ſo that they may yield to, and be elongated by the impel'd Fluids. But if a Wound is overflow'd with too much Humidity, and its Sides and Bottom are ſuddenly and unequally raiſed, we conclude, that the Veſſels are too much relax'd. Hence Medicines oppoſite to this become neceſſary.

Theſe are the Things to be obſerv'd in a Wound, with reſpect to the Veſſels, in order to the Regeneration of loſt Subſtance: We ſhall now conſider what is requiſite in the Fluids, in order to produce the ſame Effect.

2. The Subſtance loſt by the Wound is to be regenerated; but this Subſtance conſiſts of Fluids and Solids, or containing Veſſels, and contain'd Fluids: There muſt, therefore, be convey'd to the Part of the Wound a Matter in which are lodg'd the Parts requiſite to the Regeneration of the loſt Subſtance. But a natural and laudable Liquid, according to the Laws of Health, mov'd thro' the Veſſels, contains in itſelf all the Parts requiſite for this Purpoſe; for by its means are daily reſtor'd, both in the Solids and Fluids, the Parts loſt from the Body by the Actions of Health; for Aliments do not nouriſh till they are by the Fabric of the Body chang'd into a Quality like that of the human Fluids, and, loſing their own Nature, aſſume that of the Body. It is therefore requiſite that ſo much Health ſhould remain as is ſufficient, from the Aliments taken, to produce laudable and natural Humours. Hence the Reaſon is obvious, why the Reſtitution of loſt Subſtance is highly difficult, and often abſolutely impoſſible, in cacochymic Habits, but very eaſy in good Conſtitutions: It is, alſo, requiſite there ſhould be a due Quantity of this good and natural Liquid, ſo as equably to fill all the Veſſels. Hence appears the Reaſon why the Cure is difficult in Patients who, by an Hæmorrhage, have loſt a large Quantity of laudable Fluids; and this Difficulty is ſtill augmented, becauſe it is principally by the due Quantity of laudable Humours that the crude Aliments are chang'd into our Nature, and mix'd with the good Juices. Nor are theſe Circumſtances alone ſufficient; but it is, alſo, requiſite, that the natural Liquids ſhould be, with a proper Impetus of Motion, convey'd thro' the Veſſels: For when this Motion is languid, Nutrition is defective, or at leaſt deprav'd; as evidently appears in weak Habits. When the Fluids are with too great a Velocity carried thro' the Veſſels, the Body is deſtroy'd, but not recruited; as appears in Animals fatigued by too hard Labour, and in thoſe Diſeaſes where the Velocity of the Circulation is too great.

All that Art can do is, to render the Veſſels ſuch as they were in Health, and procure a Circulation of laudable Fluids thro' them with a due Force: The reſt will be perfected by Nature, who is generally ſufficient for her own Purpoſes.

By this means there will be an Impletion, Humectation, Extenſion, Elongation, of the wounded, retracted, obturated, compreſs'd, and almoſt juiceleſs Canals; an Implication of them with the adjacent Veſſels; an Application to others, which are near them; and this is brought about by the Aſſiſtance of the reticular *Plexuſes*; and at laſt, by the Help of a good Fluid, Conglutination is accompliſh'd.

It is already demonſtrated, that Arteries, even of a conſiderable Bulk, when divided, are gradually contracted, and cloſed up; and that, in conſequence of this Circumſtance, unleſs they are very large, the Hæmorrhage ſtops ſpontaneouſly: It is therefore ſufficiently evident, that when ſmall Veſſels are divided, they are cloſed by the ſame Cauſes, and the Effuſion of the Humours is, by that means hinder'd. Hence, by the Action of the Fluids on the obſtructed Orifices of theſe Veſſels, are produc'd an Inflammation, and ſlight Fevers; by which the Humours, being forc'd with a conſiderable Force into the conſtricted Extremities of the Veſſels, protrude, elongate, and open them; or, by a benign Suppuration, ſeparate from the live Parts the totally dry and mortified Extremities of the Veſſels. But theſe Veſſels no longer confin'd by the Skin, are, by the Force of the Liquid mov'd thro' them, gradually extended and elongated, and their Mouths, being open'd, they diſcharge their Liquids into the Cavity of the Wound: Hence the whole Surface of the Wound appears moiſt with Pus, and rough, as it were, with ſmall *Papillæ*, which are gradually more and more elevated, and are only the pulpous Extremities of the protuberating Veſſels; and when this happens equably in all the Circumference of the Wound, the Mouths of the growing Veſſels mutually meet each other, are applied and united, and thus the loſt Subſtance is reſtored. If, after the Wound is clean, the mucous Congeries of the growing Veſſels is daily deterg'd by the Surgeon, that which ought to reſtore the loſt Subſtances is deſtroy'd; hence the Cure is retarded, and the Surface of the Wound degenerates into the Nature of a ſordid Ulcer. The Whole, therefore, that Art can do, in order to the Regeneration of loſt Subſtance, conſiſts in procuring to the Veſſels, and the Liquids mov'd thro' them, thoſe Qualities which are requiſite to perfect Health; and taking care that the Impetus of the Fluids mov'd thro' the Veſſels, be neither too ſtrong, nor too languid: All the reſt is perform'd by Nature, as is already obſerv'd.

But this Conglutination ſeems to happen by the Application of a new Subſtance, and not by the Interpoſition of a ſoldering Juice, which, like Glue, unites the divided Extremities of the

Veſſels. For we obſerve, that if the Veſſels free from the Skin and *Epidermis* are contiguous, they forthwith grow together. Thus the Edges of the Eyelids, if excoriated, have in one Night's time been found to grow ſo ſtrongly together, that there has been a Neceſſity for dividing them with a Lancet. The Fingers, alſo, when left contiguous, after the *Epidermis* has been deſtroy'd by Gunpowder, have grown very firmly to each other; ſo great is the Tendency of the open Extremities of the Veſſels to unite with others like themſelves.

And whilſt theſe are with an equal Force happening from every Point, eſpecially of the Bottom and Sides, the Cavity of the Wound, from every Part to the Centre, is fill'd with ſolid and liquid Matter, like thoſe which were loſt.

If all the Extremities of the Veſſels in the Bottom and Sides of the Wound are equably open'd, the Motion of the Humours thro' the Veſſels will act equally on all the Parts: Hence, if there is not a greater Reſiſtance in one Part than in another, there will in every Point be an equable Elongation of the Veſſels; but if there is a greater Relaxation in one Part, than in thoſe adjacent, the Veſſels will be there more diſtended, and elongated: Thus there will be form'd a fungous Excreſcence, which, by compreſſing the adjacent Veſſels, will hinder the equable Conſolidation of the Wound. But whilſt, from all the Circumference of the Cavity of the Wound, the lengthen'd Veſſels meet each other, and are united, ſuch a Structure of the Veſſels is reſtor'd, as regenerates the loſt Subſtance. But tho' we cannot affirm, that this regenerated Subſtance is preciſely the ſame with that which was loſt, yet it is certain, from all the Phenomena, that it is highly ſimilar to it; ſince Experiments evince, that not only large Blood-veſſels, but, alſo, thoſe of the ſmall perſpiratory kind, are thus regenerated: For if the mucous Congeries of growing Veſſels in the Cavity of the Wound is rudely touch'd with a linen Cloth, red Blood is diſcharg'd; and if that Congeries is but gently touch'd, a thin Fluid is evacuated. If a poliſh'd Plate of Metal, or a Looking-glaſs, is applied, there will be form'd on the ſmooth Surfaces of theſe Bodies a moiſt Spot, which will ſoon diſappear, without leaving any Sordes; a ſure Proof that there is ſuch a Congeries of Veſſels, which contain and emit a ſubtile exhaling Fluid. Hence we may, with a great deal of Probability, conclude, that ſince in the regenerated Subſtance there are Blood-veſſels, and ſmall exhaling Veſſels; there are, alſo, intermediate Series of decreaſing Veſſels to be found in it.

But this Regeneration of loſt Subſtance in the human Body has its proper Limits; for no one ever ſaw ſo much as the leaſt Articulation of the Finger reſtor'd after it was cut off. The Veſſels, indeed, on the Surface of the Wound, are ſo concreted, as to form a Cicatrix; but the Part remains defective during the whole Remainder of the Patient's Life. Hence the loſt Subſtance of the human Body ſeems poſſible to be regenerated, when, from all the Circumference of the Wound, the elongated Veſſels can concur and unite in its Centre. But when, by a ſimple Elongation of the Veſſels remaining in the maim'd Part, ſo many organical Parts are to be reſtor'd, after they are cut off, Nature proves defective, and, by a good Cicatrix, ſecures the Part. Philoſophers are, however, juſtly ſurpriſed that an Advantage denied to the human Species ſhould be granted to ſome other Animals. Thus the celebrated *Reaumur*, in *Mem. de l'Academie des Sciences, l'An.* 1712. has ſhewn, that the Claws of Crabs and Crayfiſh, when totally ſeparated from their Bodies, may grow again, and that oftener than once: Nor has it, as yet, been evinc'd by Experiments, whether, in theſe Animals, the Power of producing new Members can be exhauſted. Thus we ſee, that, in phyſical Affairs, particular Obſervations teach us a great many Things; but that general Concluſions, deduc'd from a few known Obſervations, often prove fallacious.

Therefore to this End is requir'd firſt a proper Diet, that the Chyle, Serum of the Blood, and nutritious Matter, may be mild, glutinous, not eaſily putrefying, but of eaſy Digeſtion and Aſſimilation. Farinaceous Decoctions, either crude or fermented, Emulſions, Milk, Broths, ripe Fruits boil'd, and mild Pot-herbs, are particularly proper, if given in ſmall Quantities, and often repeated; above all Things taking care to guard againſt Repletion, Hunger, and Thirſt.

The Parts of the loſt Subſtance regenerated are reſtor'd by the Fluids convey'd to the Wound; but the Liquids flowing thro' the Veſſels are either crude, in conſequence of the Aliments not being totally chang'd into our Nature; or ſuch as, by the Action of the Veſſels and Viſcera, having loſt their own Nature, have aſſum'd all the Properties of our Fluids. The Chyle, by the chylopœetic Organs form'd from the Aliments, is for many Hours convey'd thro' the Veſſels along with the Blood, as is obvious, from the Experiments of Mr. *Lower*. Hence ſuch a crude chylous Juice is, together with the other Humours, convey'd to the wounded Part, and that in a greater Quantity than to the other Parts of the Body; becauſe there is leſs Reſiſtance in the wounded Part. Hence it has been obſerv'd, in large Wounds, that almoſt the whole nutritious Matter has been diſcharg'd from them, in conſequence of which, the Body, depriv'd of its daily Recruits, has waſted away of a ſlow Conſumption. Unleſs, therefore, by a proper Diet, mild Chyle is produc'd, the Wound will, by the acrid Chyle, be daily irritated, and cur'd with great Difficulty. But we here ſpeak of conſiderable Wounds; for ſlight Wounds do not require ſo great Caution: Beſides, the open Orifices of the Veſſels diſcharge into the Cavity of the Wound a large Quantity of a Liquid, which, after its thinner Part is reſorb'd, or diſſipated, is converted into Pus. If, therefore, the Chyle convey'd hither with the Blood, conſiſts of ſuch Parts as naturally incline too much to a putrid Degeneration, the extravaſated *Humours will* by their Stagnation, and the Heat of the Place, degenerate into a putrid ichorous Matter, but will not be chang'd into laudable Pus: Such Things are, therefore, to be avoided. But ſince Reſt is neceſſary to wounded Patients, and ſince, at the ſame time, as is ſhewn under the Article FIBRA, muſcular Motion, and Exerciſe of Body, contribute much to the Aſſimilation of the crude Aliments to our Nature; hence it is obvious, that we ought not to exhibit to ſuch Patients Aliments of hard Digeſtion, but ſuch as may be eaſily digeſted and aſſimilated; otherwiſe a large Quantity of crude, and very little concocted, Juice is convey'd to the Wound. But the Regeneration of loſt Subſtance in a Wound can only be obtain'd from ſuch Humours as are concocted, and converted into our Nature.

We ſhall now enumerate the Aliments which, by their mild Quality, and eaſy Aſſimilation, are principally ſubſervient to this Intention. Oats, then, Barley, Buck-wheat, and Rice, boil'd with Water, or the Broth of Fleſh, yield ſuch a mild and eaſily-digeſted Nouriſhment; nor do they putrefy. From the Meals of theſe, excellent Aliments are, alſo, prepar'd, by a gentle Fermentation, by which means the farinaceous Lentor is taken away. Hence well-fermented Bread, eſpecially Biſcuit, and weak Fleſh-broths without any Fat, are of ſingular Service in Caſes of this Nature. Emulſions of ſoft farinaceous Seeds, prepar'd by Trituration with Water, have almoſt the Nature of Chyle. Milk, diluted with an equal Quantity of Water in the Winter-time, but in the Summer mix'd with more Water, may be uſed for common Drink: Milk, alſo, gently boil'd with farinaceous Subſtances, yields a mild Aliment. Ripe Summer Fruits, by their grateful Taſte, and mild cooling Quality, are of ſingular Service; but they are to be gently boil'd, in order to remove all their flatulent Qualities. All ſoft Pot-herbs, ſuch as Lettuce, Endive, Spinage, Skirret, Vipers-graſs, Carrots, Goats-beard, and Parſneps, boil'd in Broth, are excellent.

But tho' all theſe Things are ſalutary, they may, nevertheleſs, prove noxious, if exhibited in too large a Quantity: For by this means the Body of the Patient will be oppreſſed, a large Quantity of crude Chyle will be mix'd with the Blood, and the Condition of the Wound chang'd. But if the Quantity of the Aliments to be taken is ſo divided, that ſome of it may be taken every two Hours, it will eaſily be aſſimilated, and the Humours convey'd to the Wound, will always have nearly the ſame Properties: But when the Patients take a large Quantity of Aliments only twice a Day, the Blood, loaded with a large Quantity of crude Chyle, will at one time be convey'd to the Wound; but at another time the Blood, when the Chyle is ſubdu'd, will have another Quality: So that, by this alternate Viciſſitude, the Condition of the Wound will be diſturb'd. Hunger is equally to be avoided with exceſſive Repletion; for Hunger denotes that the Body requires freſh Supplies: And all the Humours, unleſs qualified by a freſh mild Chyle, will become more acrid, and half putrid. For the acrid and putrid Urine, and the cadaverous Breath of Perſons who have ſuffer'd Hunger for a long time, ſufficiently evince this Degeneracy of the Humours. But we ought, in a particular manner, to take care that the Patients ſhould not be afflicted with Thirſt; for Thirſt denotes the Dryneſs of the Body, or a Stagnation of the Fluids, or ſomething of an acrimonious Nature mix'd with them: But all theſe are highly prejudicial to a Wound, ſince, in order to the Reſtitution of the loſt Subſtance, an equable Humidity, in every Point of the Wound, and a free Circulation, and mild Quality of the Fluids, are abſolutely requiſite. Hence moiſt Aliments, and the liberal Uſe of mild Liquors, are requir'd: For, by this means, the whole Body will be moiſten'd in all its Parts, the Fluids will be more diluted, and capable of a freer Circulation; and the acrimonious Particles, which would otherwiſe

wiſe prove injurious, being diluted by the large Quantity of Drink, will be eliminated by Sweat, or Urine.

A Conſideration of the Temperament of the Patient, the Seaſon of the Year, the uſual Way of Living, and the Nature of the concomitant Diſeaſe, will direct us in the Choice and Preparation of theſe Things, that they may be uſeful to the Patient.

All the Directions laid down, with reſpect to the Diet, vary according to the different Conſtitutions of the Patients, ſo that no general Rule can be given: When, in the time of War, large Numbers of wounded Men are in the Hoſpitals, many of them die, who might otherwiſe have been preſerv'd, only becauſe the ſame Aliments are given to all; for the Whole that is requiſite here is, that the remaining Health be preſerv'd in the wounded Perſon, or reſtor'd, if it is defective. But every Perſon has a kind of Health peculiar to himſelf; hence, tho' different Perſons may have their Solids and Fluids compoſed of highly *different Parts, yet they may both be ſound*: This is call'd the conſtitutional Sanity; to which we are, therefore, carefully to advert. For Phyſicians, by their proper Signs, diſtinguiſh the hot and the cold, the moiſt and the dry, the bilious, the ſanguine, the phlegmatic, and the atrabiliarious Conſtitutions; and obſerve, that various, and even oppoſite, Aliments are proper for Perſons of different Habits: So that each may preſerve a perfect Health. Thus, for Inſtance, when the Conſtitution of the wounded Perſon is known to be aqueous, and cold, thin diluting Drinks are to be avoided, and corroborating and rouſing Subſtances exhibited: But if the Humours are thick and compact, the ſolid Parts tenſe and firm, the Conſtitution is ſaid to be hot and dry; and then theſe Things are beneficial, which would have been hurtful in the other Caſe. *Hippocrates*, in *Tr. de ſalubri Victus Ratione*, tells us, that "Thoſe who are of a fleſhy ſoft Habit of Body, and of a red-"iſh Colour, ought for a great Part of the Year to uſe a dry "Diet; for their Conſtitution is moiſt: But ſuch as are of "hard ſlender Conſtitutions, or of a yellowiſh or blackiſh Co-"lour, ought to uſe moiſt Aliments for a conſiderable time; "becauſe their Conſtitutions are dry."

But the various Seaſons of the Year require a different kind of Life in the ſame Perſon: For, during the Summer Heats, Degeneracies of the Humours quickly happen; but in the Cold of the Winter they are brought on more ſlowly: For the Fleſh of Animals can, in the Winter Cold, be preſerv'd for ſeveral Weeks without Corruption; whereas the ſame Fleſh would have been waſted to a putrid Gore, in a few Days, during the Heat of the Summer. Hence the ſagacious Antients carefully diſtinguiſh'd the various Methods of Life, according to the various Seaſons of the Year. Thus in the Winter they recommended liberal Eating, generous Liquors, but in a ſmall Quantity, eating few Pot-herbs, and only ſuch as were of an heating and drying Nature, and all roaſted Aliments: But in the Summer they recommended a large Quantity of thin Drink, boil'd Aliments, and a large Quantity of Pot-herbs. In the Spring they order'd the Quantity of Drink to be gradually increaſed, but to be more diluted; inſtead of roaſted Meat, they ſubſtituted that which was boil'd: They, alſo, gradually leſſen'd the Quantity of the Aliments, leſt a great Change ſhould be ſuddenly induc'd on the Body; and thus they proceeded to their Summer Diet. Then, in the Autumn, they increaſed their Aliments, and diminiſh'd their Drink, tho' they order'd it to be more generous, till at laſt they came gradually to their Winter Diet. But as Battles generally happen in the Summer-time, and Fleſh-broths are then only given to the wounded Perſons, they are often in a very languiſhing Condition, and earneſtly deſire acidulated Drinks, and ripe Fruits, which, however, they are often forbid.

Beſides, the various Ages of Patients indicate different Regimens, with reſpect to Diet.

Cuſtom, alſo, which juſtly deſerves to be call'd a ſecond Nature, is, in this Caſe, to be conſider'd. If the hardy Ploughman, accuſtom'd to live on coarſe Bread, and ſalted or ſmok'd Fleſh, in order the better to ſuſtain his daily Fatigues, is wounded, and conſtrain'd to live on Fleſh-broths alone, his Strength will be ſoon impair'd. Hence more ſolid Aliments ſafely may, and even ought to be exhibited to ſuch a Patient. Thus *Hippocrates*, in *Aphor.* 50. *Sect.* 2. tells us, "That "Things we have been long accuſtom'd to, tho' worſe, are "uſually leſs troubleſome than thoſe Things we are not "accuſtom'd to." The ſame Author, alſo, in his Treatiſe *de Victu Acutorum*, tells us, that People eaſily bear Aliments they have been accuſtom'd to, tho' they are not naturally good; whereas they ill bear thoſe Aliments they have not been accuſtom'd to, tho' they are not of themſelves bad. He, alſo, aſſerts the ſame concerning Drink. Hence the prudent Phyſician ought to make a due Allowance for the Cuſtom of the Patient, tho' in ſo doing he ſhould run counter to the general Rules of his Profeſſion.

As for the Nature of the concomitant Diſeaſe; we have hitherto treated of the Methods to be purſu'd, when a healthy Perſon is wounded: But if there is a conſiderable Cacochymy before the Infliction of the Wound, ſuch a Regimen, with reſpect to Diet, ought to be order'd, as is moſt contrary to that Degeneracy of the Humours which is to be dreaded from the Diſeaſe, or the Cacochymy accompanying the Wound. If, for Inſtance, a putrid ſcorbutic Cacochymy is preſent; or if, by a violent Fever, all the Parts tend to a Putrefaction; we uſe ſcarcely any thing but Preparations of Milk, Oats, Rice, and aceſcent Summer Fruits: But we ought carefully to abſtain from Eggs, Fleſh, and Broths prepar'd of them. If a languid mucous Sordes is lodg'd in the whole Body, the languid Strength of the Patient is to be excited, by roaſted Fleſh, Wine, and Aromatics.

From all theſe, accurately known, and mutually compar'd, we conclude what Meats and Drinks are to be exhibited, and in what manner they are to be prepar'd: For a great Diverſity of the ſame Aliment ariſes from the different Method of its Preparation. Recent Veal, when boil'd, yields a Broth which may be exhibited even when there is ſome Dread of a putrid Degeneracy in the Humours, eſpecially if it is mix'd with a ſmall Quantity of Lemon-juice; but if the ſame Fleſh, left for ſome Days in the open Air, is boil'd, it yields a Broth which becomes putrid much ſooner. But when Veal is roaſted, it is ſtill more diſpoſed to Putrefaction; becauſe its Salts and Oils are render'd more acrid by the Fire. Crude farinaceous Subſtances are hurtful to People of phlegmatic Conſtitutions, but they may be uſed when fermented. The ſame holds true with reſpect to many other Preparations of Aliments.

Whatever is acrid, or too much augments the Impetus of the Blood, is to be carefully avoided; for which Reaſon, ſaline, aromatic, and acid Subſtances, together with acrid Pot-herbs, and Wine, are bad for Wounds.

So mild and benign is the Diſpoſition of our Humours in Health, that the Blood itſelf, and all the Liquors ſecreted from it, except the Bile and Urine (which, however, owe their Acrimony chiefly to Reſt and Stagnation), that, inſtil'd into the Eye, they excite no Pain: Wherefore, ſince the Loſs of Subſtance, which we ſuffer in Wounds, is to be regenerated and recruited by Supplies from theſe Humours convey'd to the Part affected; it ſeems highly to deſerve our Care, that nothing acrid or ſtimulating, or that is eaſily ſuſceptible of an acrimonious Quality, be receiv'd into the Body: For acrid Things are noxious to Wounds, by irritating the crude Parts, and, by their *Stimulus*, exciting a greater Motion in the Humours, and ſo increaſing the *Impetus* of the vital Liquid upon thoſe extremely tender Veſſels which repullulate in the Wound; whence they often degenerate into a fungous Fleſh; or an Inflammation, excited by that Increaſe of Motion, renders the Superficies of the Wound imperſpirable, by obſtructing the Capillaries, whence the Cure is further retarded: For whatever is thus affected, muſt again be ſeparated by undergoing a Suppuration.

All Stimulants, therefore, by whatever Title recommended, are in their own Nature prejudicial to Wounds, the Body of the wounded Perſon being ſuppoſed to be in Health. But if, for Inſtance, the Patient at the ſame time labour'd under a putrid Cacochymy, an Ingeſtion of Acids would be of Service, inſtead of being detrimental. But we would not be underſtood as if a few Grains of Salt, or ſome Drops of Juice of Lemon, added to Broths, would hurt the Patient; for the Addition of ſo ſmall a Quantity might be uſeful, by way of Precaution, againſt a Degeneracy of theſe Liquors towards a Putrefaction; and can by no means prove Stimulants of the vital Forces: For if ſome ſuch thing was not mix'd with the Broths, the Patient would in a ſhort time abhor them.

The Uſe of Wine is diſapprov'd, for the ſame Reaſons, unleſs where Cuſtom, or a Languor, demand the contrary: For Multitudes indulge themſelves every Day in drinking Wine, and other ſpirituous Liquors; and if they ſhould be compel'd to abſtain from them, would immediately languiſh, and be diſturb'd in all the Functions of their Body. For ſuch Subjects, therefore, a moderate Quantity of Wine, either pure, or diluted, as Cuſtom, or the Meaſure of Strength, ſhall ſeem to require, cannot but be proper.

Meats, alſo, ſubject to Putrefaction, Broths too thick, with alcalefcent Herbs, as Radiſhes, Creſſes, Cabbage, and the like, are improper, and prejudicial.

We are not only to attend to the Nature of Aliments at the time of their Ingeſtion, but to the Mutations to which they are ſubjected by the Heat of the Body during their Reſidence in the internal Parts. For, as we before obſerv'd, the nutritious Humours, which are generated of the Aliments, will be convey'd

to the Wound, and there be partly discharg'd thro' the open Orifices of the Vessels, into its Cavity: If these Aliments, therefore, are in their own Nature very subject to Putrefaction, it is to be fear'd that the Humours which take their Course to the Wound will be converted not into good and laudable Pus, but into a putrid Ichor. And since Fish, especially Sea-fish, will very soon putrefy, nor can be kept unless season'd with much Salt; for this Reason they are forbidden. Thick Flesh-broths, Jellies prepar'd of Shavings of Hartshorn, or Scrapings of Ivory, will, within the Space of four-and-twenty Hours, in Summer-time, dissolve into a putrid kind of Liquament. To this it may be added, that such thick Broths oppress the Stomach, and are not easily digested. It is a Property in some Plants, after a spontaneous Putrefaction, not to become acescent, as do Multitudes of others, but to be resolv'd into a fetid, volatile, pinguious Alcali. In some Plants there is an acrid, alcaline, volatile Salt, to be found even before Putrefaction; as in Radishes, Mustard, Cresses, and the like; which are all hurtful to Wounds; because they are too much inclin'd to putrefy, and irritate the Part with their acrid *Stimulus*. But the greatest Danger is from those which are subject to putrefy; because all our Humours have a natural Tendency to a putrid Degeneracy. But those Vegetables which in their own Nature are acescent, resist the spontaneous Degeneracy of our Humours; whereas the former conspire with it, and promote it. See the Catalogue of alcalescent Plants, which are injurious in this Case, under the Article ALCALI.

Foods difficult to be converted into Chyle and Blood, as are those harden'd by Salt, Smoak, or the Air, or abounding with Fat, as Bacon, fat Fishes, as, also, Geese, Ducks, and the like Birds, which feed on Fish; with viscid Aliments, as gross, leguminous, crude, farinaceous Foods, and Eggs, are bad Aliments.

They who daily exercise their Bodies with hard Labour, feed heartily on the hardest Meats, and very well digest them, but care not for lighter Food, which, indeed, would not supply the Strength necessary for sustaining the Body under so much Toil and Fatigue as they are oblig'd to undergo. But they who lead an idle Life, find themselves very much disorder'd after eating Meats of hard Digestion; whence it may be taken for a general Rule of Diet, with respect to Persons in Health, that *the harder the Labour, the harder must be the Food.* For hard Meats, which are not easily converted into good Chyle, add Weight and Inertness to a Body at Rest: And since Rest is necessary in Wounds, such Foods will not, in that Circumstance, admit of a good Digestion, and due Assimilation, which latter is absolutely requir'd, in order to the Regeneration and Restoration of the lost Substance in the Wound. But here some Allowance is always to be made for Custom, since they who have all their Life-time been accustom'd to such hard Meats, cannot, without Difficulty, be brought to live on lighter Foods.

The Flesh of Animals and Fishes, harden'd with Salt, or in the Smoak, or dried in the Air, are far more difficult to be converted into good Chyle and Blood, than if they were fresh and new; but fat Things are most prejudicial in this Case, as being always very difficult of Digestion, and being long retain'd in the Body, contract a very bad sort of rancid Acrimony. If a weak Person eats plentifully of Bacon at Dinner, he will be subject, in the Evening, to Eructations of a fat Oil, which burns the Fauces, and, being thrown into the Fire, kindles up a Flame; so long is this pinguious Substance retain'd in the Stomach undigested; and, tho' fluid, is not transmitted thro' the *Pylorus*. The same is true of fat Fishes, as Eels, Salmon, and others, and particularly of the Livers of Fishes; in which there is such a Redundance of Oil, that it may be expressed pure: And tho' this mild kind of Oil be extremely grateful to the Palate, it is very speedily converted into a very noxious rancid Matter. Hence a skilful Surgeon will know whether his Patient has indulg'd himself in such Food, by an immediate Alteration in the Wound for the worse: For the oleous Particles, being convey'd to the Wound, there obstruct the Capillaries, and, being render'd more acrid by Settlement and Heat, excite an Inflammation difficult to be resolv'd. And because this oily Matter very much abounds in many Fishes, whose external Superficies is defended by its Transudation, and their Bodies secur'd from Diffluence and Maceration in the Water in which they live; hence Birds which feed on Fish are difficult of Digestion. For tho' Aliments receiv'd are, by the natural Functions, converted into the Nature of the Receiver, yet there often remains something of its former Qualities; whence we observe such different Tastes in the Flesh of Animals, according to the Variety of Foods in which they live. Ducks, Geese, and the like Birds, if they live only on Fishes, their Flesh will have the nidorous and ungrateful Smell of Fish; and tame Hares, fed upon Cabbage-leaves, will have an abominable Fœtor at the Table: The Patient, therefore, is directed to abstain from such Foods.

Again; all the grosser Kinds of leguminous Foods, or Pulse, and crude, farinaceous Vegetables, generate a viscid Chyle, whose Viscidness, by hard Labour and Exercise, may be subdu'd; but in Persons at Rest is productive of numerous Disorders.

And, in the last Place, Eggs, tho' justly recommended as an Aliment proper for restoring weak Bodies, if they are recent, and diluted in Broths, and especially their Whites; yet as they are subject to Putrefaction, are, in such Cases, sparingly to be used; but if they are harden'd by Boiling, they are observ'd to be difficult enough of Concoction.

To the due Cure of Wounds are conducive such Medicines as remove the Impediments to Consolidation, and are generally exhibited in the Form of a Decoction. These Medicines are various, according to the Variety of the Impediments which are to be remov'd; for none will suit all Cases.

We have hitherto treated of such things as are to be observed in a Regimen of Diet for Wounds, to the end that good Liquids, being convey'd through sound Vessels to the wounded Parts, may procure a Restoration of the lost Substance. But the wounded Person was there supposed to be healthful in other respects; and, therefore, if there be either in the Body of the Person affected, or in the wounded Part itself, any corporeal Circumstance which proves an Obstacle to a Regeneration of the lost Substance, it is to be removed. Inquiry, therefore, is to be made about this Impediment, whether it be seated in the Fluids or Solids, or in both; whether it lies in the Wound itself, or in such things as are convey'd to the Wound by means of the Circulation; or, whether the Humours by too impetuous, or too remiss a Conflux to the Part, disturb or hinder a Regeneration. Since, therefore, the Nature of such an Impediment may be so various, and even so far, that the Consolidation of a Wound may be impeded by opposite Causes, it plainly appears, that there can be no such thing as an universal Remedy, and that they are vain Boasters who pretend to it. *Helmont*, under a false Persuasion that Pus was generated in a Wound by an Acid, would have every vulnerary Potion contain an occult Alcali, and that of the volatile Kind. *Blas humanum, No.* 53. Others cry up their own Nostrums; and hence it is that we are over-stock'd with such a Variety of celebrated Formulæ of vulnerary Decoctions. But let there be only a just Motion of good and laudable Fluids through the Vessels to the Wound, and the thing is done which was required. The Art of Medicine, therefore, can do no more than remove or correct an Impediment, when it is known, by proper Remedies: And this is the full Extent of its Power; all the rest of the Work is perform'd by Nature. But those vulnerary Remedies were generally prepared in the Form of Decoctions, because by this means the Virtue of the Medicines diluted with Water might conveniently mix with the Blood, and be equally distributed through the whole Body. The various Sorts of Medicines required in these Decoctions are comprised under the following Heads:

For this Reason they are chosen, as the Nature of the Case requires, out of Attenuants, Inspissants, Mitigants, or Stimulants, such as are endued with a singular Virtue of correcting the contrary Quality, Aperitives, Laxatives, and Astringents, and consequently oftentimes out of Opposites.

Attenuants: If it appears by Observation of Signs, that the Impediment to the Cure depends on too great a Spissitude of the Humours, which incommodes their Course through the Vessels, it is plain, that the proper Vulneraries in this Case, are all such Remedies as divide and attenuate the Humours to such a Degree as to facilitate their Passage through those Vessels, in which, by the Laws of Health, they are to flow. It has been demonstrated under the Article OBSTRUCTION, that this Immeability, or Incapacity of Circulation of the Fluids, may proceed from various Causes, for which several Remedies are recommended under the same Article, by which these Causes may be removed or corrected. Hence again arises a vast Variety of vulnerary Medicines with regard only to their Way of Action by Attenuation. For quite other Remedies are required for attenuating an inflammatory Spissitude, than what are adapted to an atrabilious Tenacity, or cold glutinous Lentor of the Humours, by which they are incapacitated for Circulation. The following vulnerary Decoction and Drink are of an attenuating Virtue:

Take of the Leaves of Spurge-laurel, Male Speedwell, Rue, each one Handful and an half; Root of Avens, one Ounce; Flowers of the Lesser Centaury, two Pugils: Boil them in three Pints of Water, and with it mix Salt of Carduus Benedictus, one Dram; Syrup of the Five opening Roots, three

three Ounces. The Doſe is four Ounces, four times in a Day, warm.

Inſpiſſants.] In too great a Thinneſs, or aqueous Languor of the Fluids, inſpiſſating Remedies take place. But this Thinneſs of the Humours is either attended with an Acrimony, as it often happens in the Scurvy, where the thin and acrid Blood is frequently extravaſated from the Capillary Veſſels, and forms ſcorbutic Ecchymoſes, [See ECCHYMOSIS.] and in this Caſe very ſoft and glutinous Inviſcants are required; or elſe this Tenuity and Incompactneſs of the Humours is owing to the Weakneſs of the Veſſels, and their not acting with ſufficient Force upon the contained Fluids; and then the proper Remedies are all ſuch vulnerary Inſpiſſants as augment the Force of the Veſſels; and of theſe we have treated under the Article FIBRA. And hence it appears, alſo, that oppoſite Remedies are recommended under the ſame Head, *Inſpiſſants*; for ſuch Medicines as are proper in the former Caſe, would be very prejudicial in this laſt. The following is a vulnerary inſpiſſating Drink:

Take of Orpine, *Conſolida major & minor*, Mallow, Pellitory of the Wall, each one Handful: Boil them in three Pints of Water, and mix with it two Ounces of Syrup of Marſhmallows. The Doſe is four Ounces warm four times in a Day.

Mitigants.] Theſe are ſuch Remedies as by their ſoft and particularly oily Particles, involve and obtund all the acrid Corpuſcles in ſuch a manner as to render them unactive. Hence the Medicines here meant, are not ſuch as are indued with a ſingular Quality oppoſite to a certain kind of Acrimony, but ſuch as by a ſoft Viſcidity obvolve, or envelope and mitigate all manner of acrid Particles. Such eſpecially are all thoſe Remedies which the Shops call *Emollients*, which mitigate the Acrimony of the Fluids, and ſoften and lubricate the ſolid Parts of the Body.

A vulnerary mitigating Drink:

Take of Seeds of White Poppies bruiſed, three Ounces; Flowers of Mullein, two Ounces; Leaves of Bugle, two Handfuls; Root of Scorzonera, two Ounces; Root of Liquorice, an Ounce: Boil them in three Pints of Water. The Doſe is four Ounces warm four times in a Day.

Exciting Remedies, or Stimulants.] When the vital Forces are in a languiſhing State, and a Coldneſs, Inertneſs, Paleneſs, and a mucous State of the Humours are predominant, without Signs of an attending Acrimony, then all ſuch Medicines as by a grateful aromatic Stimulus increaſe and quicken a languiſhing Motion, are proper to be adviſed; of which Nature are Aromatics, Wine, and the like.

A vulnerary ſtimulating Drink:

Take Roots of Maſterwort, and Swallow-wort, each one Ounce; Leaves of Rue, Scordium, each one Handful; Seeds of Burdock bruiſed, ten Drams; Seeds of Cardamom bruiſed, four Drams; Flowers of Lavender, and the Leſſer Centaury, each two Ounces: Boil in three Pints of Water, and exhibit four Ounces warm four times a Day.

Such as are endued with a ſingular Virtue of correcting a contrary Quality.] This Diſorder muſt firſt be known and diſcovered, before we can fix on an oppoſite Remedy endued with this ſingular Property; and the Fault here muſt lie either in the Solids or Fluids, or in both. As to the Solids, the Diſorder may conſiſt in their too great or little Coheſion; for Remedies in theſe Caſes, conſult the Article FIBRA.

Vulnerary Drinks endued with a ſingular Virtue of correcting their oppoſite Quality:

1. For a Corrective of a glutinous Quality, ſee the Attenuating Drink preſcribed above.

2. For a peccant Acid:

Take of Muſtard-ſeed, half an Ounce; Root of wild Radiſh, Leaves of Hedge-muſtard, and Creſſes, each two Ounces: Give them a ſlight Boiling in two Pints of Water, covering the Veſſel. The Doſe is two Ounces four times in a Day.

3. For an Alcali:

Take of the Root of ſharp-pointed Dock, two Ounces; Leaves of Sorrel, two Handfuls; Root of Wood-ſorrel, one Ounce; Flowers of Borage, twelve Drams: Boil them ſlightly in two Pints of Water, and exhibit as the preceding.

4. For a peccant oleous Quality:

Take of Tamarinds, two Ounces; Cryſtal of Tartar, ſix Drams; Roots of Graſs, five Ounces: Boil in two Pints of Water, and with the ſtrained Liquor mix two Ounces of Rob of Elder; exhibit as before.

Aperitives.] By this Name are called all thoſe Remedies which promote a free Circulation through all the Veſſels; for which Purpoſe are required a due Mobility of the Fluids, and a juſt Aperture of the Veſſels. Medicines for theſe Effects are, alſo, various, as they are adapted either to the Diſeaſes of the Solids or the Fluids, which obſtruct the free Paſſage of the Humours through the Veſſels.

Laxatives, Aſtringents.] Either of theſe will be found neceſſary with regard to the undue Meaſure of Strength or Weakneſs in the ſolid Parts.

From the Premiſes it appears, that there is no ſuch thing as a general Remedy, which is of Virtue ſufficient for removing all theſe Impediments; but that there are particular Medicines accommodated to each Caſe.

In our Choice of theſe Medicines we are directed by the Nature of the Diſeaſe, and the general Titles of the Medicines, under the two foregoing Aphoriſms.

When we are acquainted with the Age, Sex, Temperament, and Way of Life, of the Patient or wounded Perſon, and the Diſeaſes which may have preceded, or now attend the Wound, we thence furniſh ourſelves with Indications of what ought to be done, and by what Remedies. To illuſtrate the Matter by an Example: If a Perſon of a cloſe Contexture of the Solids, and an atrabilious Tenacity of Blood, happens to be wounded, the Wound will be dry, and not diſcharge good Pus; and if it be in the Summer-ſeaſon, the Patient very hot and thirſty, and makes but little Urine, and that high-coloured, and of a rank Smell, in that Caſe Decoctions of Avens, Borage, Bugloſs, and the like remarkably mollifying and demulcent Herbs in Whey, or pure Water, with an Addition of Syrup of Violets, Juice of Lemons, Rob of Elder, or the like, drank in good Quantities, with an Application of warm Cloths dipt in the like emollient Decoctions to the wounded Part, will in a ſhort time change the State of the Wound, the Dryneſs will be corrected, the diluted Humours will take their free Courſe thro' the relaxed Veſſels, and the Wound will be happily cicatrized. But if another Perſon happens to be wounded in the Winter-time, who is of a pale and cold Complexion, and appears all over bloated from a lax Contexture of the Solids, and a mucous Coldneſs and Inactivity of the Humours, and has beſides lived an idle Life, his Wound will appear pale, cold, and ſomewhat ſwelled, and will continue in the ſame State without much Alteration. If the Patient in this Caſe be treated in the ſame Manner as the other wounded Perſon, he would become much worſe, both as to his Wound, and the Condition of his whole Body. But if, on the contrary, you treat him with Infuſions, or ſmall Decoctions of the Roots of Avens, Maſterwort, Elecampane, Angelica, Contrayerva, *Virginian* Snakeweed, and the like, with a moderate Addition of Wine, he will in a few Hours begin to be heated, and to ſweat; and the Colour of his Wound will be changed from pale to red, and a new Life, as it were, will return into the flaccid Parts, the loſt Subſtance will be regenerated, and the Wound will be conſolidated. If the wounded Perſon be very hot and feveriſh, after Veneſection adminiſtered, Decoctions of Tamarinds, Sorrel, and the like, will be of Service. But where we cannot attain to ſo clear a Knowledge of the latent Impediment, and the vital Forces are in a pretty firm State, and capable of putting in Motion a large Quantity of ſuch Decoctions, in this Caſe we exhibit Decoctions of *China* Root, Sarſaparilla, Scorzonera, Skirrets, and the like; for theſe are Remedies which dilute, attenuate, diſſolve without Violence, relax and open the Veſſels, and by that means cauſe a juſt and equable Circulation, and a plentiful Elimination, by way of Urine and Sweat, of many Corpuſcles, which by their Stay would be very injurious to the Body; this is all that can be done in the preſent Circumſtance.

A dry and moderately warm Temperature of the Air, *free from putrid Exhalations*, and frequently renewed, is always beſt for Wounds.

When Multitudes of wounded Perſons lie ſick together in Hoſpitals, in one Room, the Air is filled with putrid Exhala-

tions, whence the Sick are very much incommoded, and many of them die, who might otherwiſe have been ſaved; for which Reaſon thoſe Places ought frequently to be aired by opening the Windows, that freſh Air may be admitted, and the putrid Vapours diſſipated. Suffumigations are much recommended for this Purpoſe; but freſh Air is more comfortable to the Patients. But a Want of freſh Air is moſt of all prejudicial in Wounds of the Head, as we are taught by Obſervation. Moreover ſuch a Temperature of the Air is required, as is qualified for chearing and refreſhing the Patient by its mild, and, as it were, vernal Warmth. For a cold Air is always hurtful to Wounds; for the Parts which are ſtript of their Integuments by the Wound, are immediately ſenſible of the Cold, to which they are unaccuſtomed, and are very much incommoded by it. Hence it is that we are told by *Hippocrates*, 5 *Aph.* 20. that "Cold is "biting to Ulcers, hardens the Skin, excites Pain without "Suppuration, and produces Blackneſſes, feveriſh Rigors, Con-"vulſions, and a Tetanos." But beſides a Warmth, a Dryneſs of the Air is, alſo, required, ſince an hot and moiſt Air is very much diſpoſed to Putrefaction; for in ſuch a Seaſon the Fleſh of ſlaughtered Beaſts is ſoon corrupted, and diſſolves into a putrid Sanies. We know indeed how to procure a Temperature of the Air by artificial Means, in what manner we pleaſe, according to the Exigencies of the wounded Patients; for by kindling a good Fire, particularly of aromatic Woods, we diminiſh the Cold of the Air, and correct its Humidity. If the Seaſon be too hot and dry, by ſprinkling the Floor ſeveral times in a Day with cold Water, or ſtrewing the ſame with the green and flouriſhing Branches of the Elder, Lime, or Willow-trees, dipt in Water, we can procure a very grateful Refrigeration of the Air. Such a Temperature of the Air, as the preſent Exigence requires, is demonſtrated by the Thermometer and Hygrometer.

The Belly is to be kept ſoluble by the Uſe of Emollients, Laxatives, and Eccoprotics.

We ſpeak not here of ſuch Medicines as cauſe an Evacuation of the Belly or Inteſtines in a violent manner, for this is not the thing here required; but the Intention to be anſwered is, that the Patient may go to Stool without much forcing and ſtraining himſelf. For we ſee Perſons who diſcharge their hard Faeces with great Difficulty, hold their Breath with ſtrong Efforts, and have their Faces ſtrained and red, and ſometimes even livid. By ſuch Efforts an Hæmorrhage may poſſibly return to the Wound, and thoſe Parts which began to unite in a Coalition be again dilacerated, eſpecially if the Wound be inflicted on the Parts near the Anus. Hence it is prudently ordered, that ſuch Patients as on account of extracting the Stone, or for a Fiſtula in Ano, are to have a Wound inflicted on thoſe Parts, ſhould, ſome Days before the Operation, have their large Inteſtines evacuated by ſome gentle Cathartic and Clyſters, ſo that no Faeces may remain; after which, for ſome time, they are allowed nothing but Broth of Fleſh, ſufficient to ſuſtain Life, but ſcarce leaving any Faeces in the Inteſtines; ſo that after the Operation is performed, they can live for a long time commodiouſly enough without going to Stool. Hence we are told by *Hippocrates*, *Lib.* 1. *de Morb.* that Coſtiveneſs is bad for a wounded Perſon.

The Belly is evacuated without much Straining, if the Faeces be ſoft, and the inteſtinal Tube ſufficiently lubricous to admit an eaſy Deſcent of the Faeces. Hence it is, that, in lean and ſlender Bodies, the Belly is often coſtive; for in ſuch Subjects every thing that is ſoluble in the Faeces is exhauſted by the ſtrong Force of the Inteſtines, whence they become very dry, compact, and hard; and at the ſame time the Inteſtines, for want of being ſufficiently lin'd with a ſoft fmectic Matter, afford but a difficult Paſſage for the Faeces. For this Reaſon, very fat Broths, very ſoft Greens, emollient Decoctions, and mild expreſſed Oils, by mollifying the Faeces, and lubricating the Paſſages, will anſwer this Intention. The like Subſtances injected in Form of Clyſters have the ſame Effect, and are of particular Service in Adheſions of the hard Faeces to the laſt Inteſtines, or near the *Anus*; for, in that Caſe, they give immediate Relief: Whereas other Exhibitions require a longer Time for their Conveyance to the affected Places. And it is often to be fear'd, that a ſudden *Teneſmus*, or Deſire of going to Stool, being excited, the wounded Perſon will be obliged to ſtrain hard, and make ſtrong Efforts, for the Excretion of the indurated Faeces.

Emollient Remedies, *for the Purpoſe aforeſaid, are*,

1. Fat Broths, of freſh or unſalted Beef.
2. Mollifying Greens boiled in Broth, a Catalogue of which you have under the Article Fibra.
3. Emollient and moiſtening Drinks and Clyſters, ſpecified under the aforeſaid Article.
4. Oils, eſpecially ſuch as are expreſſed and recent, particularly Oil of ſweet Almonds, and Oil of Olives.

Laxatives are almoſt the ſame as Emollients.

After the Exhibition of theſe emollient and lubricating Subſtances, or, as it is often practiſed, in Conjunction with them, are given ſuch Things as, by their gentle *Stimulus*, promote the Excretion of the abdominal Fæces, without diſturbing the Body, or rendering the Excrements liquid: For after taking Purgatives, the Belly is always obſerved to be bound. But ſuch Medicines as are for our Purpoſe, are called *Eccoprotica* [ſee that Article], Eccoprotics, becauſe they only expel the groſs Fæces contained in the Inteſtines.

Eccoprotics *are*,

1. Ripe, Summer, acido-dulcid, pulpous, and ſucculent Fruits; particularly Winter-cherries, Berries of Elder and Dwarf-elder, Figs, all Sorts of Garden-cherries, Cloudberries, Berries of the Stone-bramble, Strawberries, Jujubes, Apricots and Peaches of the common Sort, white and blue Garden-plums, Damaſk Prunes, common Prunes, Prunellas, and red Plums, white, black, and red Currants, Blackberries, white and red Raſpberries, Sebeſtens, Tamarinds, all Kinds of Grapes, Craneberries, and Gooſberries.
2. The recent Juices and Muſts of theſe Fruits.
3. Caſſia, two Ounces; Manna, two Ounces; Tamarinds, two Ounces; Pulp of Tamarinds, two Ounces; Juice of pale Roſes, one Ounce; roſated Aloes, ſix Grains; Raiſins, four Ounces; Galbanum, half a Scruple; Roots of Polypody of the Oak, an Ounce and an half; Rhubarb, a Scruple and an half; Infuſion of Rhubarb, one Dram; Syrup of Marſhmallows, three Ounces; Syrup of Succory with Rhubarb, one Ounce and an half; Syrup of Fumitory, two Ounces; ſolutive Syrup of Roſes, one Ounce and an half; ſimple Syrup of Violets, two Ounces; ſimple Honey diluted in Water, two Ounces; *Pilulæ Ruffi*, ſix Drams.

Whether the Remedies above-mentioned are really *Eccoprotics*, that is, Evacuators merely of the abdominal Fæces, in the ſtrict Senſe of the Word, ſeems a Queſtion; for all of them, exhibited in a large Doſe, purge the Fluids by Stool. Thus the recent Juices of Summer Fruits, and the Muſts made of them, Manna, Caſſia, Honey, Tamarinds, taken in large Quantities, or repeated Doſes, not only cauſe a Diſcharge of the abdominal Fæces, or Contents of the Inteſtines, but moſt effectually fuſe the Humours, and evacuate them by Stool; and ſuch Medicines are properly called *Cathartics*. The antient Phyſicians made a juſt Diſtinction in this Caſe; for *Aſclepiades* was of Opinion, that *Cathartics* cauſed a Colliquation of the Body [συντήκειν τὸ σῶμα], and then evacuated the colliquated Matter, which exiſted not before. *Galen*, *de Natural. Fac. Lib.* 1. *Cap.* 13. And *Theſſalus*, as appears from his own Words cited by *Galen*, *Lib. adverſus Julian. Cap.* 8. concludes, that Matter was converted into Corruption by the purging Medicine, and then excreted either upwards by Vomit, or downwards by Stool; and proves the ſame by an Inſtance of an Athleta, of a good Habit of Body, in which all things were diſpoſed according to Nature; and yet, after a Cathartic exhibited, the ſame Perſon voided very corrupt Matter by Stool, which doubtleſs in ſo ſound and robuſt a Body, did not exiſt before. *Galen*, who believed that Cathartics attracted things in the ſame State as they were pre-exiſtent in the Body, is very earneſt in his Invectives againſt this Opinion; but his Arguments ſeem not ſatisfactory. Certain it is, that Scammony, given to the ſoundeſt Perſon, fuſes the Blood into a putrid Water, which is evacuated by Stool; and the whole Body may be quite emaciated by its repeated Uſe; ſo that the Paleneſs, the collapſed Veſſels, and the Decay of Strength, are a ſufficient Proof, that there was no Evacuation of corrupt Matter which was pre-exiſtent, but that the good Humours were corrupted by the virulent Force of the Medicine, and diſcharged from the Body.

Since, therefore, all thoſe Medicines which have the Name of *Eccoprotics*, when given in large Quantities, have a cathartic Virtue; and ſince Numbers of Cathartics, exhibited in ſmall Doſes, only irritate, by a gentle Stimulus, in ſuch a manner as to procure an Expulſion of the Faeces contained in the Inteſtines alone, it appears, that this Effect may be obtained, if both the one and the other be exhibited only in ſmall Doſes, ſo as to cauſe no great Diſturbance in the Body, nor induce any conſiderable Alteration in the Humours, but only keep the Belly in a ſoluble State, which is the ſole Intention to be anſwered in this Caſe.

Hippocrates, alſo, carefully diſtinguiſhed an Evacuation of the Faeces alone from Purgation in his Book of *Prognoſtics*, where, after he had treated of the Matter diſcharged by Spit,

he ſays, "For whatever in theſe Places ceaſe not upon Expecto-
"ration, not a Diſcharge of the abdominal Fæces, [πρὸς τὴν
"τῆς κοιλίης ἐκκάθαρσιν] nor Phlebotomy, nor Diet, nor Pur-
"gations [καθάρσιας], will be ſure to excite a Suppuration."

Sleep is to be procured by Anodynes, moiſt Food, and Narcotics.

Nature has but one Way to repair the Waſte, or Defect, of that very ſubtile Fluid, I mean the Spirits, and that is, by maintaining only a vital Motion during a total Ceſſation of animal Motion, or, in other Words, by a quiet Sleep. When a Perſon is fatigued with hard Labour, or ſpent with Meditation, and makes a Repaſt on very wholſome Food, unleſs at the ſame time he refreſhes his Body with gentle Sleep, he will find himſelf oppreſſed with a Dulneſs of Spirits, and an Heavineſs of Body. But after a good and quiet Reſt by Sleep, what an *Agility of Body, and what a Serenity of Mind, immediately* ſucceeds! and what a Clearneſs and Perſpicuity of Thought and Apprehenſion does the Student experience, when he addreſſes himſelf to his Morning Meditations, after a full and quiet Night's Sleep! Hence, though by an Ingeſtion of Meat and Drink, we are able to reſtore what, by the eſtabliſhed Laws of Life and Health, is daily loſt from the Body, yet Sleep is the principal Time for the Accompliſhment of this End, and for rendering the Aliment fit to ſucceed in the Room of the loſt Subſtance. For a ſtronger Reſpiration with a more potent and equable Action of the Heart and Arteries in the time of Sleep, perfects and diſpoſes all the Humours in ſuch a manner as to render them extremely well qualified for reſtoring what was loſt, whilſt the changing, applying, and conſolidating Cauſes, act with ſo great Liberty. This was perhaps meant by *Hippocrates*, *de Inſomniis*, where he ſays, "For the Soul is waking, and
"ſince it is employed in miniſtering Supplies to the Body, has
"no Leiſure for itſelf, but furniſhes Recruits for every Part of
"the Body, particularly the Senſes of Seeing, Hearing, Feel-
"ing; for Walking, Acting, and all bodily Motions are accom-
"panied with Cogitation; but is not employ'd about itſelf.
"And when the Body is at Reſt, the Soul is in Motion; and
"extending itſelf into the ſeveral Parts of the Body, has the
"Government of them as of its own Houſe, and diſcharges
"itſelf all the Actions of the Body." Hence it appears how pernicious long Watching is to wounded Perſons, and how neceſſary Sleep is to the Regeneration of the loſt Subſtance, and the Conſolidation of the Wound. If Sleep, therefore, be wanting, it is to be procured by means of Anodynes which remove Pain; for Watchings, eſpecially in wounded Perſons, proceed from Moleſtation by Pain, though anxious Cares, or violent Paſſions of the Mind, may produce the ſame Effect. But Remedies which remove Pain operate three different Ways; for they act either by removing the corporeal Cauſe which makes ſuch an Alteration in the Body, as to occaſion in the Mind that troubleſome Perception called Pain; or by effecting ſuch a Diſpoſition in the Part of the Body to which the dolorific Cauſe is apply'd, that it can either not at all, or but weakly be affected by it; or, in the laſt place, though the Cauſe of the Pain be not removed, and the Condition of the Part affected remains unaltered, they operate, however, by taking off the Senſe of the Pain. Thus, for Inſtance, when a Part under an Inflammation is pained, the Cauſe of the Pain is an inflammatory Blood, which, on account of its Denſeneſs, is incapacitated for Circulation, and ſticks in the Veſſels, and by the Impetus of the vital Liquid preſſes with great Force upon the obſtructed Veſſels. Every thing, therefore, which is capable of rendering the impacted Blood moveable in ſuch a manner as that it may flow with a free Current through the obſtructed Veſſels, will remove the Pain by removing the Cauſe. But if by an Application of very ſoft Cataplaſms, or Fomentations, the ſolid Parts are relaxed to ſuch a Degree, as eaſily to give Way to the diſtending Cauſes without Danger of a Rupture, though there remains the ſame inflammatory Denſeneſs of the Blood, and the ſame protruſive Impetus of the vital Liquid, yet the Pain will either ceaſe, or at leaſt be very much diminiſhed. And, in the laſt Caſe, when neither of the former Effects is produced, but the Cauſe of the Pain remains, and the Condition of the Part affected continues the ſame, yet let there be exhibited a Grain or two of Opium to a Patient not accuſtomed to it, and all Senſe of the Pain will ceaſe, tho' the exciting Cauſe continues to act. Hence all Remedies which one or other of theſe three Ways are the Means of removing Pain, ought to be called *Anodynes*. But eſtabliſhed Cuſtom has now appropriated that Name to ſuch Medicines as either remove the Cauſe of Pain, or cauſe ſuch an Alteration in the pained Part that it ſhall not be affected, or at leaſt in a very ſlight meaſure, by the ſame Cauſe. And as for thoſe Remedies which only take away the Senſe of Pain, without affecting any Mutation either in the Cauſe of the Pain, or in the Part affected, they are called *Narcotics*, that is, *Stupefactives*. In former times, however, ſtupefactive Remedies were called *Anodynes*; for *Cælius Aurelianus*, treating of the Tooth-ach, ſays, that
"Many of the antient Phyſicians at the time of the Paroxyſm,
"preſcribed the Application of ſuch Medicines as the *Greeks*
"called *Anodynes*, and which we may call *Removers of the Pain*,
"which, as they are to be uſed in the Night-time, remove the
"Senſe of Pain, but not the Pain itſelf." And *Celſus*, in *Lib.* 5. *Cap.* 25. tells us, that "Thoſe Medicines are called
"*Anodynes*, which, by Sleep, alleviate Pain; but that it is
"wrong ever to uſe ſuch Medicines, unleſs abſolute Neceſ-
"ſity calls for it."

Beſides, the Cauſes of Pain in a Wound are, the Diſtraction of the Parts as yet cohering, whilſt the Lips of the Wound are retracted; the Tenſion of the nervous Fibres from a Retraction of large divided Trunks, which, alſo, draw the ſmall lateral Nerves; or, a *Diſtraction of the Fibres which remain* entire, when tenſe Nerves are half divided or punctured: An inflammatory Tumor of the Bottom and Lips of the Wounds, and the Acrimony of the Humours diſcharged into the Cavity of the Wound, and irritating the raw Parts. Anodynes, therefore, are all thoſe Medicines which by diluting, relaxing, moiſtening, correcting, or obtunding Acrimony, and reſolving diſtending Tumors, remove the Cauſe of the Pain; or ſo change the Part affected, as that it is not by the Cauſe of the Pain ſo ſtimulated, as to excite in the Mind the ungrateful Perception called *Pain*.

ANODYNES *are*,

1. Diluents.
2. Laxatives.
3. Moiſtening Subſtances; for all which, ſee FIBRA.
4. Correctors of Acrimony.
5. Such as reſolve diſtending Tumors. See FIBRA.

As for a moiſtening Diet; all farinaceous Seeds bruiſed may, by a ſtrong Preſſure, yield a large Quantity of Oil; and the ſame Seeds, when triturated with Water, yield Emulſions, in which the mild Quality of the Oil remains, without any Dread of a rancid Corruption. From theſe, therefore, or Decoctions of ſuch farinaceous Seeds with Water, Milk, or Broth, we have a moiſtening Diet in which Water predominates, but ſo adheres to the farinaceous Lentor of the Seeds, that it does not eaſily ſlip out of the Body, but remains long in it. Such Food, long perſiſted in, alleviates the moſt obſtinate Pains, by relaxing all the Solids, and rendering the Quality of all the Humours mild.

As for Narcotics; if the Pain neither remits, nor yields to the preceding Medicines, or is ſo intenſe that it cannot be borne without great Injury, till the Cauſe of the Pain is remov'd; then there are ſuch Medicines as, without removing the Cauſe of the Pain, deſtroy the Senſe of it in the Mind: For the higheſt Cauſe of Pain may be lodg'd in the Body, without any Senſe of Pain in the Mind; as is obvious in apoplectic Patients, who are not ſenſible of the Application of live Fire to any Part of their Bodies. There are many Subſtances of a narcotic Quality, ſuch as Henbane, Nightſhade, Dutroy, and many others; but the Uſe of all theſe is ſuſpected, eſpecially if exhibited internally; becauſe they greatly diſturb the Operations of the Mind. The Uſe of Poppies is, by numberleſs Experiments, found to be far ſafer. As the *European* Poppies are of ſmall Efficacy, a pretty large Doſe of them muſt be exhibited. The Juice of the *Aſiatic* Poppy, known in the Shops by the Name of *Opium*, if exhibited prudently, and in a due Quantity, excellently ſooths Pain; which, however, if its Cauſe is not remov'd, will return a few Hours after, when the Efficacy of the Medicine ceaſes. *Galen*, in *Method. Medend. Lib.* 12. *Cap.* 8. tells us, that *Opium* proves hurtful, by its cold Intemperature. Many others have embraced the ſame Opinion, and for that Reaſon have either uſed it with great Terror, mixing it with the hotteſt Subſtances, in order to correct this formidable Coldneſs, or abſolutely condemn'd it as a deleterious Subſtance. The Perſon who has once taſted the hot Bitterneſs of *Opium*, will eaſily believe that a cold Quality is unjuſtly aſcrib'd to *Opium*; but this excellent Medicine has long been branded with this Mark of Infamy; ſo that many Phyſicians have not only rejected, but even abhorred the Uſe of it. A great Part of the Fame and Reputation *Paracelſus* acquir'd was owing to the ſurpriſing Cures he perform'd by his *Laudanum*. The Inhabitants of *Aſia*, eſpecially ſuch of them as are by their Religion debarred from the Uſe of Wine, daily uſe large Quantities of *Opium*, without any Injury: They, alſo, who moſt condemn *Opium*, uſe it, without any Dread, in the grand officinal Compoſitions, as the *Theriaca*, Mithridate, and *Philonium*, in all

of

of which there is a large Quantity of *Opium*: Others, with a ſordid View to Intereſt, ſecretly give *Opium* diſguiſed with other Medicines, that they may ſeem, by other *Arcanums*, to do that which is owing to *Opium* alone. It is true, moſt Phyſicians were once of Opinion, that the medicinal Efficacy of Mithridate, the *Theriaca*, and other Compoſitions of a like Nature, did not depend on the concurring Force of all the Ingredients, but that, from a certain Union of them all, a new and highly-efficacious Medicine was produced: For which Reaſon, they recommended old *Theriaca*, and preferred it to that which was newly prepared. Tho' this Opinion ſeems pretty ſpecious, yet any Perſon, who conſiders the Matter, will eaſily perceive, that there is an hot Quality in theſe grand Compoſitions, but that their principal Virtues depend upon *Opium*. The Mithridate of *Damocrates*, older than any of the reſt, conſiſted of ſo many different Ingredients, that *Pliny*, in *Lib.* 29. *Cap.* 1. ſaid, "Some of the Gods muſt have been Author of ſuch a Fraud, "ſince the Craft of Man could never have invented ſuch a "Medicine, which diſcovers a ridiculous Oſtentation of Art, "and a monſtrous Pretence to Science." But *Andromachus*, who liv'd under *Nero*, and was one of his principal Phyſicians, retain'd moſt of the Ingredients in the Mithridate of *Damocrates*, and added ſome others, eſpecially the Fleſh of Vipers, and thus made a new Antidote, which, from that Circumſtance, he call'd *Theriaca*. He wrote a ſmall *Greek* Poem, dedicated to *Nero*, in which he gives a Deſcription of his *Theriaca*, which he calls γαληνὸν, that is, *Tranquil*. Nor is this to be wonder'd at; for the cunning *Andromachus* added a third Part more of *Opium* to his *Theriaca*: So that the Mithridate of *Damocrates* began to loſe its Credit, and the *Theriaca* alone was highly extol'd, and has ever ſince retain'd its Reputation: A ſure Proof that *Opium* was not only daily uſed, but, alſo, produc'd ſalutary Effects, even in the Times when it was condemn'd almoſt by all Phyſicians.

All the officinal Preparations from the Flowers, Leaves, and Juice of the Poppy, may be ſo exhibited, as only gently to obtund the Senſes, or, by a larger Doſe, to induce a profound Sleep, or, by an unſkilful Uſe of them, a mortal Apoplexy. It often happens, that a ſmall Doſe of them alleviates Pain without inducing Sleep, but a gentle Eaſe of Body and Mind is produced, which cannot be deſcrib'd, even by thoſe who have experienc'd it. But this Medicine, tho' exhibited in the ſame Quantity, does not produce the ſame Effects on all Patients. Whilſt, therefore, a Phyſician is ignorant of the particular Conſtitution of the Patient, it is expedient to diſſolve a few Grains of *Opium* in ſome proper Vehicle, and give it in Spoonfuls every Quarter of an Hour, till the Senſe of Pain is alleviated: But the ſame Quantity of *Opium* exhibited all at once, produces a greater Effect than when it is given in ſeparate Doſes. They who have often uſed this Remedy, are no longer reliev'd by it, unleſs its Quantity is gradually augmented: And it is certain, from undeniable Obſervations, that by gradually augmenting the Doſe, ſome Perſons have, without any Injury, daily taken incredible Quantities of *Opium*. Narcotics are always attended with this Diſadvantage, that they render the Patient coſtive; but this Symptom is eaſily remov'd by a gentle Clyſter: Such Medicines, however, externally applied to the Part affected, afford great Relief. Hence Cataplaſms and Fomentations of emollient Herbs, with the Addition of the Leaves of Henbane and Garden-poppies, are of great Uſe.

Narcotics are ſuch Medicines as blunt the Quickneſs of the Senſes; and are either,

1. The moſt mild Paregorics; ſuch as the bruiſed Seeds of white Poppies, two Ounces;
The Syrup of white Poppy-heads, one Ounce and an half;
The Syrup of *Diacodium*, one Ounce and an half; and
The Syrup of wild Poppy-flowers, three Ounces:
Of all which various ſafe Medicines may be prepar'd. Thus,

For a mild Draught.

Take of the diſtilled Water of wild Poppy-flowers, three Ounces; of the diſtilled Water of Bean-flowers, one Ounce; of the diſtilled Waters of Peony and Elder-flowers, each one Ounce and an half; of the diſtilled Water of the Flowers of the Lime-tree, one Ounce; and of the Syrup of wild Poppy-flowers, one Ounce and an half: Mix for a Draught.

The ſame, ſomewhat more hypnotic.

To the former Mixture, inſtead of the Syrup of wild Poppy-flowers, add the ſame Quantity of the Syrup of *Diacodium*, or of the Syrup of white Poppy-heads.

A mild Emulſion may be prepared thus:

Take of ſweet Almonds, Pine-kernels, and the Seeds of white Poppies, each one Ounce; and of the diſtilled Water of wild Poppy-flowers, a ſufficient Quantity: Make into an Emulſion; with ten Ounces of which mix one Ounce of the Syrup of wild Poppy-flowers.

The ſame, a little more paregoric.

To the former Emulſion add, inſtead of the Syrup of wild Poppy-flowers, the ſame Quantity of the Syrup of *Diacodium*, or of the Syrup of white Poppy-heads. Or,

2. Stronger Narcotics: Thus,

For Pills.

Take of the pureſt *Opium*, two Grains: Make into three Pills; of which let the Patient take one for a Doſe, taking a ſecond an Hour after, if the firſt produces no Effect; and the third after that, if the two firſt prove ineffectual.

For a Powder.

Take of the pureſt *Opium*, a little dry, two Grains; and of red Coral, and Pearl-ſugar, each half a Dram: Mix into a Powder, to be divided into three Doſes; to be exhibited in the ſame manner with the preceding Pills.

For a Preserve.

Take of the preceding Powder of *Opium*, one Doſe; and of Marmalade of Quinces, one Dram: Make into a Bolus; to be uſed and repeated in the ſame manner with the preceding Preparation.

For Drops.

Take of the beſt *Opium* dried, one Dram; and of rectified Spirit of Wine, one Ounce: Make into a Tincture; the Doſe of which may be thirty Drops, in two Ounces of diſtilled Baum-water, and half an Ounce of the Syrup of wild Poppy-flowers. Or,

Take of *Opium*, a little dried, one Dram; and of the Spirit of Vinegar, one Ounce: Make into a Tincture; the Doſe of which may be thirty Drops, in two Ounces of the diſtilled Water of wild Poppy-flowers, and half an Ounce of the Syrup of wild Poppy-flowers.

A hot Mixture.

Take of the Tincture of *Opium*, prepar'd with rectified Spirit of Wine, ſeventy Drops; of the Syrup of white Poppies, ſix Drams; and of the diſtilled Waters of Citron and Orange-peel, and Cinnamon, each two Ounces: Make into a Mixture; of which let the Patient take one Spoonful every Half-hour, till the Pain is allay'd.

A cold Mixture.

Take of the Tincture of *Opium*, prepar'd with Spirit of Vinegar, eighty Drops; of the Syrup of Mulberries, ſix Drams; and of the diſtilled Waters of Borage, and wild Poppies, each three Ounces: Make into a Mixture; to be uſed, in the ſame manner with the former.

An Emulſion may be prepared thus:

Take of the bruiſed Seeds of white Poppies, two Ounces: With Barley-water reduce to an Emulſion; with ten Ounces of which mix of the Syrup of *Diacodium*, one Ounce and an half; of the Tincture of *Opium* prepared with rectified Spirit of Wine, twenty Drops; of diſtilled Cinnamon-water, two Drams; and of diſtilled Citron-peel-water, ten Drams: Of this Preparation let the Patient take an Ounce and an half every Half-hour, till the Pain begins to be alleviated.

An Epithem may be prepared thus:

Take of the Tincture of *Opium*, prepared with Spirit of Vinegar, three Drams; of the diſtilled Waters of Elder and Roſe-flowers, each three Ounces; of the Vinegars of Elder and of Roſes, each half an Ounce: Mix all together; to be applied with Cloths to both Temples.

It is of great Service, in Caſes of this Nature, ſo to apply Demulcents to the Part affected, as to remove the Cauſe which deprives the Patient of Sleep, which is the Pain in the Part affected. This Intention is anſwered by the following Preparations, applied tepid, and preſerved in the ſame State of Tepidity, till the Pain is alleviated. A Cataplaſm may be prepar'd thus:

Take of the recent Leaves of Garden-poppies, one Handful; of the recent Leaves of black Henbane, half an Handful; and of the recent Leaves of Marſhmallows, four Handfuls;

Handfuls: Boil in new Milk, and towards the End add of the Meal of Linſeed, one Ounce; and of the recent expreſſed Oil of Linſeed, two Ounces: Make into a Cataplaſm.

A Fomentation may be thus prepar'd:

Take of the thin expreſſed Juice from the preceding Cataplaſm, three Pints: With which mix half a Dram of pure *Opium*, for a Fomentation.

The Patient's Mind is to be kept ſerene, Venery is to be avoided, and Reſt enjoin'd.

As violent Commotions of Mind are capable of inducing ſtrange Changes on the Body, and diſturbing all its Functions, they muſt always prove hurtful to wounded Patients: But a calm Serenity of Mind, undiſturb'd either by the Conſciouſneſs of Guilt, or the Dread of Want, and ſupported by the chearing Hopes of future Proſperity, is of great Service to wounded Perſons: An Exceſs of Joy is equally prejudicial with other Commotions of Mind. *Sanctorius*, and others who have wrote on the ſtatical Part of Medicine, have obſerv'd, that Chearfulneſs renders the Body highly perſpirable, and ſenſibly lighter than at other Times: But this denotes a free Circulation thro' all the Veſſels, and an expeditious Exerciſe of all the Functions, that is, perfect Health.

Venery is to be avoided; nothing more throws the nervous Syſtem into Commotions, than the Uſe of Venery: Hence it is, by the unanimous Conſent of Phyſicians, accounted prejudicial to wounded Patients; and the fatal Event has been prov'd, by melancholy Inſtances. Hence, in the Diet of wounded Perſons, all thoſe Things are to be avoided, which may ſtimulate to Venery; ſuch as Oyſters, Crabs, and Lobſters.

That Reſt is abſolutely neceſſary to wounded Perſons, is ſufficiently obvious: For by Motion thoſe tender Veſſels which are regenerated in the Wound, under the Appearance of a ſoft *Mucus*, are deſtroy'd.

There are two Circumſtances requiſite to the Regeneration of loſt Subſtance in a Wound; that is, that a laudable Fluid ſhould, in a due Quantity, and with a proper *Impetus*, be convey'd to the Wound; and that the Veſſels, receiving the Humours convey'd to it, ſhould only receive and tranſmit ſuch Liquids as, in a State of Health, ought to be convey'd thro' them. Hitherto we have treated principally of thoſe Things which ought to be obſerv'd in the Diet, and the Uſe of Remedies, that a good Diſpoſition of the Fluids, convey'd to the Wound, may be produc'd. We now come to treat of that Diſpoſition of the tranſmitting Veſſels in a Wound, which is requiſite to the Reſtitution of the loſt Subſtance, and the Union of the ſeparated Parts.

That the Canals may be kept in a due Condition, and the Fluids in the Wound preſerv'd from corrupting, and by that means hindering the Actions above-mentioned, the Part is to be defended from the Air; the Wound is to be fomented with mild balſamic Vulneraries, fill'd with Lint for the ſake of an equable Compreſſion, and treated with ſuch Medicines as are friendly to the Nerves.

After the Infliction of a Wound, the Extremities of the divided Veſſels are retracted, leſſen'd, and reſiſt the Fluids forc'd thro' them: Then an Inflammation begins to be form'd in the Bottom and Lips of the Wound; this is ſucceeded by a Generation of Pus; and whilſt this happens, the Extremities of the open Veſſels are gradually protruded from the Bottom of the Wound upwards, and from all its Circumference towards the Centre; and theſe Extremities reſemble a tender *Mucus*, of which is regenerated the Subſtance loſt in the Wound. It is therefore obvious, that, to this Purpoſe, it is requiſite theſe pulpous Veſſels ſhould retain a due Softneſs; and that the Humours, diſcharg'd from the Veſſels into the Cavity of the Wound, ſhould be of a mild Quality. For if, by a ſpontaneous Degeneracy, they ſhould acquire an Acrimony, the pulpous Subſtance growing again, will be deſtroy'd. Both Intentions are in ſome meaſure anſwer'd by preventing a free Acceſs of the Air: For it is certain, from Experience, that the Parts of Animals may, for a very long time, be preſerv'd from Corruption, if they are carefully kept from all Acceſs of the Air; whereas they often become putrid in a few Days, when expoſed to the free Air. *Boyle*, in his Treatiſe of the Uſefulneſs of Experimental Philoſophy, tells us, that the roaſted Fleſh of Goats and Fowls, cut in ſmall Pieces, immerſed in melted Butter, and kept in a cloſe Veſſel, were preſerv'd free from Corruption, and retain'd their natural Taſte for above ſix Months, in a Ship returning from the *Eaſt-Indies*, tho' the Air was intenſely hot. Beſides, the Air, acting freely on a Wound, dries and deſtroys the tender Extremities of the growing Veſſels; ſo that theſe, becoming mortified, *Sordes* are produc'd in a Wound, before pure; and theſe *Sordes* muſt be ſeparated, before a Conſolidation can happen. For this Reaſon, many have imagin'd that ſomething of a poiſonous Quality was lodg'd in the Air, when they ſaw that ſo great Changes were produc'd in Wounds by its free Acceſs to them. For this Reaſon, alſo, the moſt ſkilful Surgeons order Wounds to be dreſſed as ſeldom as poſſible.

The whole Surface of the Wound ought, therefore, to be ſo cover'd, as to be defended from the Air: This is beſt done by vulnerary Balſams, eſpecially of the native kind; which, by their thick Unctuoſity, adhere to the Parts, and contain in themſelves a mild Aromatic, and at the ſame time an Acid, which reſiſts Putrefaction, but which is, however, ſo ſheath'd up in a pinguious Subſtance, as not to prove prejudicial by its Acrimony: For by a chymical Analyſis all native Balſams yield an acid Liquor, and a fragrant, thin, aromatic Oil; whilſt a tough Reſin remains in the Bottom of the Veſſel. When theſe native Balſams, gently warm'd, that they may ſpread equably, are in a ſmall Quantity applied to the Surface of a Wound, they cover the tender Veſſels, prevent the Acceſs of the Air, hinder the drying of the Parts, and preſerve the extravaſated Humours from Putrefaction. Hence it is obvious, that only a ſmall Quantity of theſe Balſams is requiſite; and that thoſe Surgeons act prepoſterouſly, who incumber Wounds with too large a Quantity of them: For they are heterogeneous Bodies in a Wound, which, by the Interpoſition of their Bulk, hinder the Concretion of the Parts. Moſt native and artificial Balſams act almoſt in the ſame manner.

The mild vulnerary Balſams for pure Wounds, are,

1. The native Balſams of *Capivi* and *Gilead*, Liquidamber, that of *Mecha*, *Opobalſam*, the Palm Balſam, thoſe of *Peru* and *Tolu*, and that of Turpentine.

2. Simple artificial Balſams, ſuch as rectified Oil of Wax, the thick Oils of Turpentine, Linſeed, St. John's-wort, Roſes, Nightſhade, ſweet-ſcented Trefoil, and freſh Butter.

3. Artificial compound Balſams. Thus,

Take of the Flowers of Sulphur, four Drams; and of the Oil of Linſeed, or Olives, four Ounces: Boil over a gentle Fire, till the Sulphur is totally diſſolv'd.

Take of the beſt *Gum Elemi*, cut ſmall, one Part: Diſſolve over a gentle Fire, and add an equal Quantity of pure native *Venice* Turpentine: Paſs the Solution thro' a linen Cloth, and add two Parts of the Marrow of Beef, boil'd, and ſeparated from its Membranes. This, like the *Linimentum Arcæi*, is an univerſal Balſam.

Take of the Wood of red Sanders, one Pound; and of common Water, four Pints: Boil for two Hours; ſtrain and inſpiſſate to the Conſiſtence of a thick Extract, with which mix two Drams of Dragon's-blood reduc'd to a fine Powder. Mix a little of this with the preceding Balſam, till it acquires an agreeable red Colour; and this is the red Balſam.

Take of the Oil of Olives, one Pound and an half; and of the Wood of red Sanders, half an Ounce: Boil gently, till the Oil is of a deep red Colour; then ſtrain it boiling-hot thro' a linen Cloth, and diſſolve in it of yellow Wax, one Pound; and of the beſt Turpentine, one Pound and an half. This reſembles the Balſam of *Lucatellus*, and is render'd ſtill better by the Addition of one Ounce of *Peruvian* Balſam.

All theſe are to be dropt warm into the Wound, which is to be cover'd with a Pledget dipt in the Balſam; and the Dreſſings are to be renew'd every twenty-four Hours.

We are, alſo, to conſider, that the equable Covering of the Skin is wanting in the Wound: Hence the pulpous growing Veſſels, cover'd with a ſoft Balſam, and fomented with a moiſt Warmth, will eaſily yield to the diſtending Liquids, will be augmented in all their Dimenſions, and, being dilated, will admit foreign Humours. Hence the whole Surface of the Wound will degenerate into a flocculent Subſtance call'd fungous Fleſh. This will be prevented, if ſuch a Degree of Preſſure is applied to the Wound as is ſufficient to ſupply the Defect of the Skin which before compreſſed it: This may be done by filling the Cavity of the Wound with ſoft and dry Lint, ſlightly anointed with a mild Balſam, in that Part where it touches the Surface of the Wound; then let the Lint be ſo ſecur'd, by a Plaiſter or Bandage, as by a gentle Preſſure to prevent the exceſſive Dilatation of the Veſſels; guarding, at the ſame time, againſt too ſtrong a Preſſure, which might deſtroy the tender Veſſels, or ſuffocate the Motion of the vital Humours thro' the Parts. By

ſuch a gentle Preſſure the *Membrana Adipoſa*, every-where in the adjacent Parts confin'd by the Skin, is hinder'd from riſing in the Wound, where it would degenerate very ſoon.

Plaiſters are of Uſe to retain theſe Things in Wounds, and are hardly of any other Service than that produc'd by their ſafe tenacious Quality.

This will not eaſily be believ'd by thoſe Surgeons who generally aſcribe the happy Cure of Wounds to their Plaiſters; and in this Caſe almoſt every one pretends to an *Arcanum* of his own: But if the before-enumerated Conditions of a Wound are preſent, it is cur'd, whatever Plaiſter is applied, provided it contains nothing in itſelf which may prove hurtful by diſturbing the begun Work of Nature, or by removing the Conditions requiſite to the Regeneration of the loſt Subſtance, by its exceſſive *Stimulus*, or any other Cauſe. That it is ſo, is obvious, from this, that altho' every Surgeon has his favourite Plaiſter, known only to himſelf, yet they are all equally ſucceſsful in their Cures, *if the other Remedies have been in the ſame manner* applied to the Wound. It is true, Plaiſters, applied to the Skin, may, beſides their requiſite Tenacity, contain ſuch Ingredients, as being mov'd, and render'd active by the Heat of the Body, may inſinuate themſelves into the bibulous Veſſels, and by that means conſiderably affect not only the Part to which they are applied, but, alſo, the whole Body: Such as bliſtering Plaiſters, mercurial Plaiſters, and many others. But ſuch Plaiſters we do not here conſider, ſince, in this Caſe, it is only requiſite the Dreſſings applied to the Wound ſhould be retain'd in their Place; for which Intention Tenacity alone is ſufficient. Hence Plaiſters, prepar'd of Lead, or its various Calxes, boil'd in Oil to a due Degree of Tenacity, are of great Uſe; becauſe they are eaſily borne by thoſe whoſe Skins are inflam'd by the Application of almoſt any pinguious Subſtance. Such are the red Lead Plaiſter, *Diapalma* Plaiſter, the *Emplaſtrum Diapompholygos*, the Ceruſs Plaiſter, the red defenſive Plaiſter of *Vigo*, and many others, which in this Caſe produce the ſame Effect.

The red defenſive Plaiſter is prepar'd thus:

Take of the Oil of Roſes, and white Wax, each ſix Ounces; of *Armenian* Bole, and Dragon's Blood, each an Ounce and an half; and of the Powder of red Roſes, half an Ounce: Mix all together over a Fire, and agitate till cold.

The ſame End is, alſo, anſwer'd by the *Emplaſtrum Defenſivum Caruleum*, and the red Lead Plaiſter.

The Fluids convey'd to the Wound, and extravaſated in it, the half-mortified Fibres, and the obſtructed and tumefied Veſſels, produce in the Wound Pus, Ichor, Sordes, and fungous Fleſh.

At the renewing of each Dreſſing, the Wound is to be carefully view'd, in order to obſerve whether there is any Change induc'd on its Surface, which may hinder the Regeneration of the loſt Subſtance, and the Conſolidation of the Wound: For if all the Parts are red, clean, and equably moiſt, we know that the Veſſels and Humours have the due Conditions requiſite to the Cure: But if the Wound is dry, or ſordid, we certainly know, that it cannot be conſolidated till theſe Sordes are remov'd, and the Humours equably convey'd thro' the Veſſels in every Point of the Surface of the Wound. But theſe Impediments to the Conſolidation ariſe either from the extravaſated Fluids degenerating into a foreign Nature, or from an Obſtruction and Tumefaction of the Veſſels, or from both theſe Cauſes together: For many Parts in a Wound may be partially divided, and yet adhere to the ſound Parts, tho' they are totally depriv'd of the vital Influx of the Fluids. Hence they are mortified, and ought to be ſeparated from the ſound Parts; for ſo long as they remain there, they, like an heterogeneous Body, hinder the Conſolidation of the Wound: But after the Orifices of the Veſſels, on the Surface of a Wound, begin to diſcharge their Humours, theſe collected Humours, by their Stagnation, the Heat of the Place, and the Diſſipation of their thinner Parts, are chang'd into a mild unctuous Liquid call'd Pus; which, tho' always a good Sign, as we have already obſerv'd, may yet prove hurtful, when too long left in the Wound; for then it is corrupted, and becomes acrid: But if the Surface of the Wound is moiſt with a thin Ichor, but not with a laudable Pus, there will never be a good Conſolidation ſo long as this Symptom is preſent. But this is underſtood, if ſuch a thin Sanies appears in the Wound after it has been cover'd with a proper Dreſſing for twelve Hours, or more: For if, an Hour after all the Pus is remov'd, the Wound is uncover'd, no Pus will appear, but a far thinner Liquid; which, however, when left there, will be converted into Pus. But by Ichor we here mean that thin Liquid, generally of an acrid Quality, which, by its Continuance in the Wound, will never be converted into a laudable Pus, but always become more and more acrid. But ſuch an Ichor is either form'd from an Extravaſation of ſuch Fluids as cannot be converted into laudable Pus; or from Pus too long left in the Wound: For in this Caſe it is again attenuated, and becomes acrid. For when a ſuppurated Part of the Body is, at a proper time, laid open with a Lancet, a laudable and thick Pus is diſcharg'd: But if ſuch a Part remains too long before it is open'd, the contain'd Pus is again attenuated, and, upon opening the Place, a thin Sanies is diſcharg'd, inſtead of a laudable Pus.

Sordes are form'd in a Wound, either by the half-divided Parts, or the mortified Parts, as yet not ſeparated from ſuch as are ſound, or by the Veſſels dilated and diſtended with a ſtagnant Liquor; in which Caſe, the Surface of the Wound does not appear pure and red, but white, almoſt like Bacon. And unleſs theſe *Sordes* are ſeparated from the live ſubjacent Parts, they are chang'd into a yellow, and ſometimes a brown Colour, and denote the worſe Degeneracy, the more their Colour recedes from white, and inclines to brown.

Fungous Fleſh is principally form'd, when the Surface of the Wound is not compreſſed with a Force equal to that with which the entire Skin compreſſes the adjacent Parts: Hence the *Membrana Adipoſa* riſing, ſwells, and ſoon degenerates into fungous Fleſh, as is already obſerv'd; and eſpecially if, by a Fever, the *Impetus*, and Velocity of the Circulation, are increaſed: For, in this Caſe, the dilated Veſſels riſe, if not prevented by a due Compreſſion. For we ſee that almoſt every Part of the Body, when the equable Preſſure upon it is remov'd, riſes into a Protuberance, which makes leſs Reſiſtance than the Part in its natural State did. Thus in Wounds of the Head, or after the Application of the Trepan, when a Part of the *Cranium* is remov'd, and at the ſame time the *Dura Mater* divided, the Subſtance of the Brain riſes in ſurpriſing *Funguſes*. If the Integuments of the Abdomen are divided by a Wound, and the *Peritoneum* at the ſame time is left entire, unleſs the Part is ſecur'd by a proper Bandage, ſoon after the Contents of the Abdomen, being preſſed into the leſs-reſiſting Place, and the *Peritoneum* being dilated, will produce an *Hernia*. The Origin, therefore, of fungous Fleſh, in a Wound, is the natural Conſequence of the Diminution of the equable Compreſſion.

So long as all theſe are preſent in a Wound, they will hinder its Conſolidation; for they are heterogeneous, and conſequently ought to be remov'd: And how this is done, is ſhewn in the next Aphoriſm.

Theſe Things are generally remov'd by the Help of Digeſtives, Abſtergents, Corroſives, Exſiccants, and often by Compreſſion.

When ſkilful Surgeons ſee the Surface of a Wound ſo degenerating that it is not every-where red and moiſt, but white, yellow, or brown *Sordes* appear, they know that the beſt Balſams are not ſufficient: Nature, indeed, alone, by a benign Suppuration, endeavours to ſeparate theſe corrupted Parts; but the ſubjacent live Veſſels, incumber'd with theſe adhering *Sordes*, are not able eaſily to remove them: Hence theſe half-mortified Parts, adhering long to them, are corrupted, and degenerate into a worſe Quality: Then they apply ſuch Remedies as mollify theſe ſordid Parts, but at the ſame time reſolve them by their ſaponaceous Quality, and by their gentle *Stimulus* irritate the ſubjacent live Parts, that there may be a more eaſy Separation of thoſe *Sordes* from the vital Veſſels to which they adhere. Theſe are call'd Digeſtives, a chirurgical Word, taken from the Digeſtion of the Stomach. For this Purpoſe, Surgeons take any native Balſam, ſuch as Turpentine, for Inſtance; this they triturate with the Yolk of an Egg, ſo as to ſubdue the oleous Tenacity of the Balſam to ſuch a Degree, that it may be diluted in Water; then they add a certain Quantity of Honey, which, by its ſaponaceous Quality, divides and reſolves Concretions. Such a Medicine, laid upon a Pledget, they apply to the ſordid Surface of the Wound: The *Sordes*, thus ſoften'd and reſolv'd by the ſaponaceous Quality of the Medicine, are, by the Formation of a laudable Pus, ſeparated from the ſound Parts, and the Wound is render'd pure. *Hippocrates*, in *Tract. de Affectionibus*, beautifully repreſents the Uſe of ſuch Medicines in impure Wounds, in the following manner: "Pinguious Subſtances are improper for Parts that are either inflam'd, ſordid, or inclining to Putrefaction; for cooling Medicines are adapted to inflam'd Parts; and for ſuch as are ſordid, and inclining to Putrefaction, acrid Remedies, which cleanſe by exciting a certain *Stimulus*, are moſt conducive." And in his Treatiſe *de Locis in Homine*, he informs us, that the laudable Humours convey'd through the Veſſels to the Wound, remove the *Sordes*, ſoften'd, and render'd capable of a

more

more eaſy Separation by ſuch Medicines: His Wordsare, "If an "Ulcer is to be clos'd or filled, theParts are to be rendered tumid; "for the Fleſh regenerated by the nutritive Juices in Con- "junction with the Aſſiſtance of Nature, propels and forces "out that ſordid Fleſh, which by the Medicine was diſpoſed "for a Separation."

A Digeſtive may be thus prepared:

Take of Native Turpentine, one Ounce; and one Yolk of an Egg: Mix intimately; and then incorporate with half an Ounce of Honey of Roſes.

As for Abſtergents; theſe are ſomewhat more acrid than Digeſtives. If, therefore, to Digeſtives we add a little Aloes, Myrrh, and *Venice* Soap, we have an Abſtergent, which only differs in Degree from a Digeſtive, ſince it is ſomewhat more ſtimulating.

As for Corroſives; theſe are far more acrid than the preceding Medicines, and mortify the Parts they touch, ſince they induce a Cruſt on the Surface of the Wound to which they are applied; and under this Cruſt the vital Veſſels by their Motion, and the Fluids conveyed to them, gradually ſeparate and expel the mortified Parts. All theſe Medicines, indeed, totally deprive the Sordes, adhering to the live Veſſels, of a vital Influx of the Fluids; but by this means alone we can never obtain a Separation of the mortified Part, which Nature alone produces by a benign Suppuration. But Corroſives are of this Uſe, that in a Moment, and, as it were, by a ſingle Touch, they prevent the Influx of the Humours into the obſtructed and dilated Veſſels which produce the Sordes in Wounds, and which obſtinately reſiſt the Efficacy of milder Abſtergents. Hence they induce a kind of gangrenous Cruſt on the Surface of the Wound, to which Cruſt the ſofteſt Digeſtives are now-and-then to be applied, that the Eſchars formed by the Corroſives, being ſoftened by their means, may, by the Action of the live ſubjacent Veſſels, be ſeparated from the ſound Parts to which they adhere; and thus the Surface of the Wound be rendered pure. Hence it is obvious, that the prudent and rare Uſe of Corroſives is requiſite, unleſs after the Eſchars are fallen off, the Wound ſtill appears impure. Thoſe Surgeons are, therefore, in the Wrong, who believe that a Wound can be cleanſed by Corroſives alone, ſince they only hinder the Increaſe of the Sordes, by converting them into a mortified Eſchar, which ought afterwards to be ſoftened and ſeparated by a Suppuration. Beſides, by a too frequent Application of Corroſives, the pure and live Parts are affected in the ſame manner, by which means the Sordes are increaſed, not diminiſhed. *Galen*, in *Methodo Medend. Lib.* 3. *Cap.* 6. furniſhes us with a beautiful Inſtance of this Kind.

Corroſives are divided into various Claſſes, acording to their different Degrees of Acrimony. Thoſe are moſt efficacious which conſiſt of an highly ſtrong Acid united with a metallic Glebe. Among theſe the moſt uſeful is the Lunar Cauſtic; for it conſiſts of an highly concentrated Spirit of Nitre, and the pureſt Silver mutually united; and as this Corroſive is of a ſolid Conſiſtence, and may be moulded into any Form, it may be applied more ſafely than almoſt any other Corroſive; for other Corroſives applied to a Wound act equally on all its Surfaces; but this may be applied to each Point in it, and by a momentaneous Touch produces an Eſchar. Hence the Effect of this Corroſive is greater or leſs, according as it is applied for a longer or ſhorter time; and as often all the Parts of the Surface of a Wound are not covered with equally thick Sordes; hence they do not require an equally ſtrong Action of a Corroſive. And this Caution is beſt of all obſerved by the Application of the Lunar Cauſtic.

Firſt, The mildeſt Corroſives are burnt Alum, the Aſhes of green Wood burnt, *Mercurius Dulcis*, white precipitate Mercury, and White Vitriol.

Secondly, Stronger Corroſives are red precipitate Mercury, Colcothar of Vitriol, and *Vigo*'s Troches of red Lead. And

Thirdly, The ſtrongeſt Corroſives are Butter of Antimony, the *Lapis Infernalis*, corroſive Sublimate Mercury, Oil of Tartar *per Deliquium*, and Oil of Vitriol. The ſtronger Corroſives are, the more prudently they ought to be uſed.

The following may ſerve as a Formula:

Take of Aloes, and Myrrh, each one Dram; of the Salt of Tartar, two Drams; and of common Water, two Ounces: Mix and boil them to an Elixir.

But the Eſchars formed by Corroſives, are to be ſoftened by the Application of the mildeſt Remedies, that they may be ſoon ſeparated from the ſubjacent live Parts; and when they are fallen off, it appears, whether the repeated Uſe of Corroſives is neceſſary, or whether the Wound may be rendered pure by mild Digeſtives, and Abſtergents.

As for Exſiccant Medicines; when a Wound is moiſtened with a large Quantity of too thin an Humour, then ſuch Medicines as abſorb the Liquids, and corroborate the Veſſels, are highly beneficial. Of this Kind are the earthy bibulous Subſtances reduced to an impalpable Powder, leſt by the Roughneſs of their Parts, they ſhould irritate the raw Wound, ſuch as the Aſhes of burned Bones, Maſtich, Olibanum, and Sarcocolla, which not only abſorb the Fluids, but, alſo, corroborate the Veſſels.

An Exſiccant may be prepared thus:

Take of Verdegriſe, five Ounces; of crude Alum, one Ounce; of ſtrong Vinegar, ſeven Ounces; and of pure Honey, fourteen Ounces: Boil up into an Ointment.

The following Subſtances are, alſo, exſiccant: Alum gently calcined, Quick-lime-water, Blood-ſtone, Maſtich, Dragon's-blood, and Gum Sarcocol.

As for Compreſſion; this Method is principally expedient when Sordes are formed by the dilated Veſſels degenerating into a fungous Excreſcence: for after ſuch a ſpongious Fleſh is deſtroy'd by Corroſives, a ſimilar Excreſcence will ſoon be produced afreſh, unleſs the Luxuriancy of the Parts is prevented by a due Compreſſion, as is obvious from the ſo frequent Regeneration of fungous Excreſcences of the Brain. For this Reaſon, ſkilful Surgeons often fill the Wound with nothing but dry Lint, which they ſecure by a moderately tight Bandage; or they ſometimes, alſo, uſe a thick Pledget, one Side of which is applied to the Surface of the Wound, whilſt the ſuperior Part, being covered with ſome vulnerary Balſam, prevents the Acceſs of the Air.

Theſe things are to be uſed till a white, mild, viſcid, ſmooth, equal, and inodorous Pus is formed; under which the Sordes are abſterged, the contuſed and tumid Parts conſumed, and thoſe corrupted by the Air ſeparated, the Cavities filled, and the divided Parts conglutinated.

All the Medicines, mentioned above may check the Veſſels when too eaſily diſtended, and convert the half-mortified Parts, together with a Part of the live Veſſels, into a gangrenous Eſchar; but they cannot ſeparate this Cruſt from the ſubjacent live Parts; for this Nature alone performs by means of a Suppuration; nor is there any other Way in which it can be done. But the Sign of a Suppuration is the Generation of Pus, as is already obſerved. When, therefore, a laudable Pus appears in a Wound, we know that the Veſſels are ſo diſpoſed as to tranſmit their proper Fluids, and that theſe Fluids have the Properties requiſite to Health. We have already ſpoke of the things requiſite, that the Humours conveyed to the Wound, ſhould be of a laudable Kind. But here we only treat of thoſe Impediments which are lodged in the Wound itſelf, and hinder the Regeneration of the loſt Subſtance, and the due Conſolidation of the ſeparated Parts; for ſo long as theſe Sordes are lodged in the Wound, they will hinder the Cure as much as any other foreign Body would. But when by proper Medicines laudable Pus is formed in a Wound, we know, that by this means all that may be ſeparated from the live Veſſels which could hinder the Cure of the Wound. But this Pus ought not only to have the Conditions here ſpecified, but ought to be of the ſame Kind, and in an equal Quantity in every Point of the Surface of the Wound; for it often happens, that the whole Surface of the Wound is not covered with Sordes, but only a certain Part of it. In this Caſe the pure Parts will yield a laudable Pus, and the others will diſcharge a Liquid of a different Quality. The Pus will not, therefore, be every where of the ſame Kind, but various in different Parts of the Wound. And in this Caſe, the ſordid Places alone require the Application of the Medicines ſpecified above, but which are improper for the pure and live Parts of the Wound.

Under this Pus, whatever half-lacerated Subſtance adheres to the live Parts, and all the Extremities of the obſtructed Veſſels, together with the obſtructing Matter, are diſengaged and ſeparated, and the pervious Veſſels freely tranſmit the Humours. Hence all the Tumor of the Lips of the Wound ariſing from an Obſtruction of the free Circulation of the Humours, begins to diſappear; the Parts that were contuſed, or corrupted by the Admiſſion of the Air, ſeparate; the tender Veſſels, covered with a laudable Pus, as with a mild and natural Balſam, are elongated, meet thoſe adjacent to them, are united with them, and form a new Texture of Veſſels, by which the loſt Subſtance is regenerated in the Wound, and the ſeparated Parts united.

The Whole, therefore, that Art can do, is to remove the Impedi-

Impediments which hinder the Generation of a laudable Pus in the Wound, and Nature alone is ſufficient for the reſt.

Then ſuch things as generate Fleſh, are to be applied, which are mild Digeſtives.

Theſe Remedies are by Surgeons called *Sarcotics*, though, ſtrictly ſpeaking, there is only one *Sarcotic*, which is Nature herſelf, reſtoring the loſt Subſtance under the mild Pus. This, as is already obſerved, is beautifully deſcribed by *Galen*, when he ſays, that the Matter of the Fleſh to be generated is laudable Blood; and that the Producer or Author of ſuch Fleſh is Nature. All other Remedies, to which an incarning Quality is aſcribed, only remove Impediments, and afford Aſſiſtance; and they are none elſe than ſuch as by a due Preſſure confine the Veſſels, and procure the ſame Diſpoſition of them, which they generally have in a State of Health. Theſe Effects they produce by preventing the Acceſs of the Air, by cheriſhing the Parts, and ſo confining the extravaſated Humours, that they may by a due Continuance be converted into laudable Pus.

For a Wound, when pure, is injured by the Application of every acrid Subſtance, ſince by this means the tender Veſſels beginning to grow, are deſtroyed; and when theſe are mortified, new Sordes are produced from them, which muſt be again ſeparated. Hence, in this Caſe, mild vulnerary Balſams are only proper: But we know, that the Cure of a pure Wound proceeds well if there is a reddiſh Colour in the Wound; for too red a Colour denotes an Inflammation; if there is a due Quantity of laudable Pus; if the Bottom and Lips of the Wound grow equably; if nothing is raiſed above the equable Surface; if the Lips of the Wound are not higher than the adjacent Skin, but appear equal and not corroded; and, if in the Lips of the Wound a pale-bluiſh Colour begins to appear, which indicates that a Cicatrix is forming.

Sarcotic, or incarning Medicines, are the vulnerary Balſams.

Take of yellow Wax, black Pitch, and common Roſin, each half a Pound; and of Linſeed-oil, two Pounds: Mix all duly together. This is the Baſilicon, or Tetrapharmacum: Or,

Take of yellow Wax, ſix Ounces; of the Oil of the Flowers of St. John's-wort obtained by Infuſion, two Pounds and an half; to which, when fuſed over a gentle Fire, add of dried Reſin of the Pine triturated, and of the beſt common Colophony, each one Ounce and an half; when they are melted, take them off the Fire, and ſtraining them through a Linen Cloth, add two Ounces of the beſt *Venice* Turpentine, ſtirring them with a Stick. When they begin to thicken, ſprinkle into them of the beſt Maſtich, and Olibanum, each one Ounce; and of Saffron finely triturated, one Dram. This is the *Unguentum Aureum*.

But if when thoſe things are done which anſwer the firſt Intention, it appears, that none of the Subſtance of the Body is taken away, the Lips are to be united in ſuch a manner, that the Parts naturally united, may again be applied to each other, and retained in that Situation.

The general Intentions to be purſued in the Cure of every Wound are already enumerated, and it has been obſerved, that all heterogeneous Bodies, whether left in the Wound by the wounding Inſtrument, or form'd by a Corruption of the Fluids or Solids, ought to be removed, becauſe they hinder the Union of the ſeparated Parts. It has, alſo, been ſhewn how, by what means, and with what Cautions, theſe foreign Bodies ought to be removed. If, therefore, after theſe Meaſures are taken, it appears, that ſome of the Subſtance of the Parts is loſt, that is firſt to be reſtored, before there can be an Union of the ſeparated Parts. And how this Reſtitution of the loſt Subſtance is to be obtain'd, has been, alſo, ſhewn. But if there is only a ſimple Diviſion of Parts before cohering, made by the wounding Cauſe, without any Loſs of Subſtance, or any foreign Body left between the ſeparated Parts, the Intention of Cure is, of all others, the moſt ſimple; and that is, ſo to apply the ſpontaneouſly receding Lips of the Wound to each other, and to retain them in that Situation, that there may be ſuch a Situation of all the Parts, as there was before the Diviſion. The Union of the Parts thus diſpoſed, is very ſoon performed by Nature alone, even in the largeſt Wounds, if the now mentioned Conditions are preſent. In this Caſe, the beſt vulnerary Balſams interpoſed between the Lips of the Wound, are injurious, becauſe they are heterogeneous Subſtances, which can never unite with the Parts of the Body. But the Application of the Parts ſeparated, to each other, is only requiſite, without the Interpoſition of any other Remedy.

How eaſily wounded Parts grow, not only to thoſe with which they were naturally united, but, alſo, to thoſe with which they never before cohered, may be ſeen in ſome memorable Inſtances recorded by *Hildanus*, *Cent.* 6. *Obſ.* 7. *Schenckius*, *Obſerv. Medicin. Lib.* 6. *Obſ.* 23. and *Celſus*, *Lib.* 5. *Cap.* 28. If, therefore, this Concretion is ſo eaſy in Parts which never before naturally cohered, it is much more to be expected, when Parts before united again become contiguous.

The firſt of theſe is done,

First, By procuring to the Part the ſame Situation it had whilſt in a State of Reſt, before it was wounded.

Secondly, By a gentle and equable Compreſſion of the Parts to each other, that they may be contiguous to each other in every Part of their Surface, and remain at Reſt.

1. It is of great Uſe to know the Situation of the Parts in a Man at Reſt, and eſpecially in an healthy Man when ſleeping; for then all voluntary Motion ceaſes, and the Parts of the Body left to themſelves, are diſpoſed in their moſt natural Situation. It will then appear, that no Articulation of the Body is extended, but that they are all gently bended; for in a ſound Perſon, when ſleeping, the Fingers are never extended, nor are the Legs ever ſtretched out in a ſtrait Line with the Os Femoris, but all the Articulations are gently bended. The ſame holds true with reſpect to the reſt; for the Muſcles which bend the Articulations, are generally found ſtronger than the Extenſors; for which Reaſon the Articulations, when at Reſt, always appear gently inflected. This, alſo, appears in a perfect Palſy, in which Caſe all voluntary Motion ceaſes; for if the whole Arm is paralytic, the Fingers are always found inflected, and remain in that Condition; ſo that after the Palſey is cured, it is often impoſſible to extend the Fingers, becauſe the Ligaments of the Articulations are become rigid, and the Flexor Muſcles not elongated for ſo long a time, are by their proper Contractility ſhortened. Hence the Extenſors of the Fingers cannot ſurmount theſe Obſtacles. *Hippocrates*, who carefully obſerv'd the natural State of the Parts of the Body, in order to know how far in Diſeaſes it receded from it, and to diſtinguiſh their various Degrees of Violence, has in his *Prognoſtics*, when treating of the Manner in which the Patient lies, beautifully taken notice of this in the following manner: "The Patient ſhould "be found by the Phyſician lying on his Right or Left Side, "with his Arms, Legs, and Neck, a little inflected, and his "whole Body moiſt; for in this manner many ſound and "healthy Perſons lie." When this is neglected in the Cure of Wounds, the Parts often grow together in another Situation than they had naturally, or an unſeemly Deformity ariſes from the diſtracted Parts, or the natural Motion of the Parts is often much depraved. A memorable Inſtance of this is found in *Hildanus*, *Cent.* 1. *Obſerv. Chirurg. Obſ.* 83.

In the firſt Dreſſing of a Wound this is carefully to be attended to; for the raw Parts, when united, are ſoon conglutinated. Hence the Error committed cannot be corrected, without a cruel Diviſion of the concreted Parts.

2. The Parts of the Body ſeparated by a Wound, by their proper Contractility, gradually recede more and more from each other, as is already obſerved. But that they may be again agglutinated, it is requiſite they ſhould remain in Contact. Hence by an artificial Preſſure, that Force is to be ſurmounted, by which they endeavour to recede from each other. But it is in a particular manner to be obſerved, that this Union of the Parts ought to be made in the whole Surface of the Wound; for if the Lips of a deep Wound are contiguous, whilſt the ſubjacent Parts are at a Diſtance from each other, there will remain in the Wound a Cavity, in which the extravaſated Humours will be collected, and make the Wound degenerate into a ſinuous Ulcer. This is performed by the Application of Compreſſes, and a proper Bandage, ſo compreſſing the adjacent Parts, that the Lips of the Wound may be contiguous in the Bottom, as well as in the Skin itſelf. But it is requiſite this Compreſſion ſhould be moderate, leſt there ſhould be too great an Anguſtation of the Veſſels in the compreſſed Parts, by which means an Inflammation, and all its Conſequences, may be produced. It is, alſo, requiſite there ſhould be a perfect Reſt of the wounded Part. Hence the wounded Limb is to be ſecured in ſuch a manner as that it may be immoveable; for often during Sleep, or thro' the Careleſneſs of the Patient, the Motion of the wounded Member changes the Situation of the Parts, by which means the Lips of the Wound are ſeparated, and the concreted Parts dilacerated. Hence the happy Event of the Cure is deſtroyed.

The Parts are retained in Union,

First, By adheſive indented Plaiſters, with Loops or Eyes at their Extremities, applied on both Sides of the Wound, and

and drawn together by Threads; theſe are uſed in long tranſverſe Wounds of the Skin, and the more lax Parts.

According to the Diverſity of Wounds, various Methods are requiſite to keep the contiguous Parts in a due Union, and this is done,

1. By what Surgeons call the *dry Suture*, in order to diſtinguiſh it from Sutures made by the Needle; they take ſome adheſive Plaiſter, capable of adhering ſtrongly to the ſound Skin. For this Purpoſe they uſe common Glue, Iſing-glaſs, or any other Subſtance of a proper Tenacity. This they ſpread upon ſtrong Linen Cloths which will not eaſily yield; theſe, when gently warm'd, that they may adhere the more ſtrongly, they apply on both Sides at ſome Diſtance from the Lips of the Wound. Then at Pleaſure they draw together theſe Plaiſters by Threads affixed to them, and the Skin adhering to theſe Plaiſters, is on both Sides ſo drawn together, that the Lips of the Wound may become contiguous; and as theſe Plaiſters do not cover the Wound, the Surgeon can commodiouſly ſee whether the united Lips of the Wound have their natural Situation; and if they deviate from it, this Deviation may be eaſily corrected. As the Bulk of Wounds varies, ſo a different Number and Figure of theſe Plaiſters are requiſite. In ſmall Wounds, whoſe Lips are at a ſmall Diſtance from each other, ſuch digitated Plaiſters are ſufficient without Loops. But in large Wounds, whoſe Lips recede much from each other, it is ſafer to apply Plaiſters which may be drawn together by Cords fixed in their Loops. See *Tab.* XXV. with the Explications; and the Article SUTURA.

But it is ſufficiently obvious, that only the Skin is drawn together by theſe Plaiſters, whilſt, if the Wound is deep, the ſubjacent Fat being highly moveable and lax, will not follow the Skin. Hence ſuch Plaiſters are generally only of Uſe, where the Skin alone is divided, and the Parts being ſufficiently lax, can eaſily follow it. Hence they are principally of Uſe in ſlight Wounds of the Face, and Integuments of the Head; as, alſo, in ſlight Wounds of any other Parts of the Body.

When the Lips of the Wound are united by an adheſive Plaiſter, we muſt apply a Pledget dipt in ſome vulnerary Balſam, in order to prevent the Acceſs of the Air. And leaving the Plaiſters on, we are daily to view the external Surface of the Wound, in order to diſcover whether every thing is right.

Adheſive Plaiſters may be thus prepared:

Take of the Diapalma Plaiſter, a ſufficient Quantity; and a little Olive-oil: Diſſolve together for a Plaiſter.

Or,

Take of common Pitch, a ſufficient Quantity: Spread on a Linen Cloth, and apply.

Secondly, The Parts are retained in Contact by Bandages, and the Application of Compreſſes, that the divided Parts being equably applied to each other, may remain in that State, and be united, which is eaſily obtained by a proper Method of Compreſſion. And this Method is proper in longitudinal Wounds.

Superficial Wounds do not require this, but only deep Wounds, in which it is requiſite, that the Parts in the Bottom of the Wound ſhould be as contiguous as the external Surface, before a good Cure can be obtained. In the right Application of theſe, the Skill and Dexterity of the Surgeon are principally known. Bandages rolled round any Part, equably compreſs the Surface thereof. But by the Application of Compreſſes, the Compreſſion of the Bandage, though remaining the ſame, may act more upon ſome Places than others. By this means we can determine and regulate the Degree of Compreſſion, ſo as that all the Points of the Surface of the Wound may become contiguous. But it is ſufficiently obvious, that this Method is of no Uſe, unleſs the Parts adjacent to the Wound are ſoft, and conſequently capable of yielding: If, for Inſtance, a deep Wound is longitudinally inflicted in the Thigh, by the Application of Compreſſes to both Sides, and the Uſe of a proper Bandage, the ſoft Parts may be equably compreſſed, ſo that the divided Parts in the whole Surface of the Wound may again be rendered contiguous. In other leſs fleſhy Places, this is not ſo eaſily obtained. But in ſuch Places rarely Wounds happen ſo deep as to require this. *Hippocrates*, in his Treatiſe *de Medici Officina*, when treating of the various Uſes of Dreſſings, ſeems to point at this Method in the following manner: "But when any Parts are divided, they are to be contracted, "but the Contraction is to be made at a certain Diſtance from "the Lips of the Wound, and the Compreſſion is to be made "gradually, at firſt very ſmall, then greater, and its greateſt "Degree is to be terminated by the mutual Contact of the "Parts divided."

Though this Method is, of all others, moſt ſucceſsfully uſed in longitudinal Wounds, yet it may, alſo, be ſometimes uſed to Advantage in tranſverſe Wounds of the Parts. A memorable Inſtance of this is found in *Mem. de l'Acad. des Sciences, l'An.* 1722.

Thirdly, The Parts are retained in Contact by Sutures made with Needles of Steel, which in ſmall Wounds may be ſtrait, but in large Wounds crooked, with a ſharp Point, and waxed Thread in their Eyes. Theſe Needles are to be introduced at a ſufficient Diſtance from the Wound, and are to paſs to its Bottom in ſuch a manner, that the Point may emerge at an equal Diſtance on the oppoſite Lip of the Wound. Then taking the Needle quite through, the Thread is to be ſo drawn as to retain the Lips of the Wound in Contact; and after the Application of a ſlight Compreſs, a Knot is to be tied on it. This Method is to be repeated as often as the Length of the Wound requires, beginning either at the Middle, or one of the Ends of the Wound. Then the Lips are to be anointed with ſome proper Balſam, and applying ſlight Compreſſes over the Knots, the Whole is to be covered with a Plaiſter.

This Union of the Parts ſeparated by a Wound, is called the *bloody*, or *true Suture*, ſince the Conjunction of the Parts by adheſive Plaiſters hardly deſerves the Name of a *Suture*. In this Caſe it is particularly requiſite, that the Union ſhould be made with as little Pain, and Irritation of the Parts, as poſſibly may be; for when ſuch an Operation is roughly performed, it is often ſucceeded by a violent Inflammation, which hinders the Union of the Parts brought into Contact. For this Purpoſe, pretty ſtrong Steel Needles are requiſite, though not too brittle, leſt they ſhould break. A conical Figure in theſe Needles would be prejudicial, becauſe the gradually augmented Thickneſs would make them paſs with Difficulty through the Parts. Hence ſuch are uſed, whoſe anterior Part being priſmatical with ſharp Edges, eaſily paſſes through the Fleſh, and makes Way for the reſt of the Needle which is conical or cylindrical. In Wounds which are not deep, ſtrait Needles of this Kind are ſufficient; but in deep Wounds, crooked ones are neceſſary, that being protruded to the Bottom of the Wound, the Points may the more eaſily emerge. A different Curvature of theſe Needles is requiſite, according to the different Deepneſs of Wounds. Unleſs the Eyes of theſe Needles had on each Side a Groove for containing the Thread, whilſt the Needle was drawing through their Eyes, the Threads protuberating on each Side could not follow, without a Dilaceration of the Parts. The Thread is to be waxed, that it may eaſily paſs through the Parts, and not imbibe the Humours; for tumefied Threads would compreſs the Parts through which they paſs. Beſides, the Humours reſorb'd by the Thread, becoming acrid by their Continuance, and the Heat of the Place, may irritate the Parts. The Needle with a Thread in it is to be entered at a ſufficient Diſtance from the Wound, leſt there ſhould afterwards be a Dilaceration of the Parts, if it was entered too near the Wound. Theſe Needles ought to be thruſt to the Bottom of the Wound, and then protruded upwards, that they may again emerge at an equal Diſtance on the oppoſite Side of the Wound; for unleſs they penetrate to the Bottom of the Wound, the ſuperior Parts will be brought together, whilſt the inferior will remain at a Diſtance, and form a Cavity in which the extravaſated Humours being corrupted by their Stagnation, will of the pure Wound form a fiſtulous Ulcer. Hence the Parts united muſt again be divided.

When the Threads are paſſed through, by a gentle Compreſſion of the Hands, by which, as *Celſus*, in *Lib.* 5. *Cap.* 26. expreſſes it, "the Skin, as it were, ſpontaneouſly follows its "Guide," the Lips of the Wound are to be rendered contiguous, and retained in that Union by drawing the Threads together. But in order to avoid Pain, and the Dilaceration of the Parts as much as poſſible, Compreſſes, eſpecially of waxed Linen, leſt by imbibing the Humours they ſhould prove injurious, are to be applied before the Knots are tied. According as the Length of the Wound is greater, or its Figure more or leſs angular, more or fewer of ſuch Sutures are required; for if the Stitches, as *Celſus* in the Place before quoted, informs us, "are at too "great a Diſtance from each other, they do not retain the "Parts in Contact; but if they are too near each other, they "excite an intenſe Pain, becauſe the oftener the Needle paſſes "through the Parts, the more of them are galled by the "Thread, and the greater Inflammations ariſe, eſpecially in "the Summer." A Pledget dipt in a mild vulnerary Balſam is laid upon the Wound. Then by a proper Bandage, or the Application of a Plaiſter, the whole Apparatus is retained in its due Situation.

If a violent Inflammation, or an intenſe Pain, do not ariſe, the Wound is to be left in this Situation for two or three Days; then removing the Bandage, or Plaiſter, we are to obſerve, whether from the Smell any Corruption is formed by the extravaſated Humours, and if it is ſo, the Pledget is to be cautiouſly removed, and another dipt in the like Balſam applied; or a few Drops of the Balſam may be dropt upon the old Pledget, ſo that it may be ſtill left on the Wound. When it appears, that the Lips of the Wound are grown ſufficiently firmly together, the Threads are gently and prudently to be drawn, in order to know, whether they may be commodiouſly taken out; and this, for the moſt part, is very eaſily done; and the ſmall Wounds left are ſoon filled up.

But if a violent Inflammation, and intenſe Pain, and an exceſſive Tenſion of the Parts ſucceed the Suture, it is better to cut it again, and cure the Wound without Suture; for unleſs this is done, a Train of terrible Symptoms will ſucceed; and when it is too late, force the Surgeon to do that, which if it had been ſeaſonably done, might have proved more beneficial.

The various Kinds of Sutures, and the different Methods of performing them, are deſcribed by the Authors who have wrote on chirurgical Operations, and under the Article SUTURA.

Theſe Sutures are proper in Wounds that are recent and not bloody; but, however, without any violent Hæmorrhage; in ſimple Wounds, without any Contuſion, or Fracture of the Bones; full, that is, without any Loſs of Subſtance, tranſverſe, oblique, or angular Wounds.

But they are prejudicial in Wounds attended with any conſiderable Hæmorrhage, old, ſanious, purulent, ſordid, contuſed Wounds, thoſe with Loſs of Subſtance, ſuch as are covered with Cruſts, ſuch as are dangerous in conſequence of a Wound of ſome large Veſſels, ſuch as are very deep, ſuch as are greatly inflamed, ſuch as are poiſoned, and ſuch as are inflicted in Parts which neceſſarily move.

In this Aphoriſm is determined for what Wounds Sutures are beneficial, and for what they are prejudicial.

They are proper, then, for recent bloody Wounds: For if the Wound has been inflicted for ſome time, and eſpecially if there has been a free Acceſs of the Air to it, the Extremities of the Veſſels in the Surface of the Wound will be mortified. Hence they muſt be ſeparated from the live Parts by a Suppuration, nor can they grow together; ſo that it would be to no Purpoſe to make an Union by Suture.

They are proper in Wounds not accompanied with great Hæmorrhages: Becauſe the extravaſated Blood will diſtract the Lips brought together by Suture; hence a Dilaceration, Pain, an Inflammation, and all its Conſequences, will be produced.

They are proper in ſimple Wounds: That is, Wounds in which there is no Contuſion, or at leaſt a very inconſiderable one. Hence *Hippocrates*, in *Tract. de Ulceribus*, informs us, that Wounds made with a ſharp Inſtrument may be cured without Suppuration; but if a Contuſion is preſent, they are to be ſo treated as to bring on a Suppuration as ſoon as poſſible; for it is neceſſary the contuſed Fleſh ſhould become putrid, and be converted into Pus.

They are proper in full Wounds: That is, Wounds in which there is only a Diviſion of the Coheſion without any Loſs of Subſtance; for if any Part is taken away by the Wound, the ſeparated Parts cannot be rendered contiguous without diſtracting them from their natural Situation. Hence ſuch a violent drawing together of the Parts will always be ſucceeded by an unſeemly Cicatrix, and an Injury of the Functions.

They are proper in pure Wounds: That is, Wounds in which nothing of an heterogeneous Nature is left by the wounding Cauſe, in which there are neither Sordes, grumous Concretions of Blood, nor fungous Fleſh; for all theſe muſt be ſeparated and eliminated from the Wound before a Conſolidation can be expected.

Sutures are, alſo, proper in tranſverſe, oblique, and angular Wounds: Becauſe in theſe Caſes, neither adheſive Plaiſters, nor artificial Application of Bandages and Compreſſes, are ſufficient to render the Parts contiguous, and retain them in Union.

But Sutures are prejudicial in Wounds where there is a large Hæmorrhage: Unſkilful Surgeons, whilſt without any Diſtinction they unite all Wounds by Suture, often do a great deal of Harm; for what Advantage is it to unite ſeparated Parts, when after they are united, they cannot grow together; or when the extravaſated Humours, retained by the Lips of the Wound, muſt afterwards be evacuated by cutting the Suture? A ſhameful Inſtance of this Kind is given by *Pare*, in *Lib.* 10. *Cap.* 32. Unleſs, therefore, the whole Surface of the Wound is pure and ſound, and no Subſtance loſt, Sutures will always be injurious. Beſides, if a Wound is inflicted in a Part of the Body, through which large Blood-veſſels or conſiderable Nerves run, nobody will dare to force a Needle deep into ſuch a Part, except one, who being ignorant of Anatomy, is not appriſed of the Danger. There is the ſame Danger when the Wound is too deep, becauſe the Needle may eaſily hurt the Tendons, and membranous Parts; and when theſe are injured, violent Symptoms generally ſucceed. Beſides, when a Wound is very dry, the divided Parts cannot be ſo brought together, as to be contiguous in all the Points of their Surface, unleſs the Threads paſſed through the Parts, are ſtrongly draw'd together. Hence a Dilaceration, and violent Inflammation, are greatly to be dreaded. If an Inflammation has ſeized the wounded Part, and if it is roughly treated by Suture, the Inflammation will frequently be ſo increaſed as to bring on a Gangrene, and the obſtructed Extremities of the inflamed Veſſels, together with the obſtructing Matter, muſt, by a mild Suppuration, be reſolved and ſeparated, before the Surface of the Wound can be pure and fit for Union.

If the wounding Inſtrument is infected with Poiſon, ſo as to produce anomalous, malignant, and virulent Symptoms, unleſs a particular Antidote, capable of deſtroying the Force of the Poiſon, is known, the whole Hope of a Cure conſiſts in increaſing the Afflux of the Humours to the wounded Part by Suction, or the Application of Cupping-glaſſes, and thus eliminating the virulent Matter; or by the actual Cautery, the infected Part is in a Moment to be deſtroyed, leſt the Infection ſhould be communicated to the reſt of the Body. It is, therefore, ſufficiently obvious, that Suture retains the virulent Matter of the Wound, which ought to have been expelled with all poſſible Expedition.

It is, alſo, ſufficiently evident, that an abſolute Reſt of the Parts, united by Suture, is requiſite; for if theſe Parts are moved, the ſame will happen as if the Threads paſſed thro' them were continually drawn. Hence a perpetual Irritation, Pain, Inflammation, and all their Conſequences, will happen. We can check all thoſe Motions which depend on the Will; but thoſe Motions which are abſolutely neceſſary to the Continuation of Life, will always continue; and this is the Reaſon, why Wounds of the Thorax do not admit of Suture, eſpecially if they are inflicted on the convex Surface of the Ribs; for at every Inſpiration the Breaſt being dilated, the united Parts will be diſtracted with the moſt intenſe Pain. For this Reaſon, alſo, when Surgeons by Suture unite Wounds of the Abdomen, leſt the Viſcera ſhould be expreſſed through the Wound, they ſo ſecure the Abdomen by Swaths, that the Patient reſpires almoſt without moving it. The Raſhneſs, therefore, and Imprudence of thoſe Surgeons, who indiſcriminately ſtitch up every Wound like a Piece of torn Cloth, are greatly to be condemned.

Fourthly, The Parts are retained in Contact by a Needle paſſed through the Lips of the Wound; and a Thread ſo wrapt about it as to hinder them from receding from each other, but keep them united. This Method is proper in large and gaping Wounds of the pendulous Parts of the Body.

The former Suture was performed by Thread paſſed through the Holes made by the Needle, and then bringing the Lips of the Wound together by a drawing of the Threads. But in this Method, the Needle is not taken out of the Parts perforated, but left in them, and then a Thread is on both Sides ſo wrapt about, that the Lips of the Wound perforated by the Needle, and brought together, may remain contiguous. This Method was principally uſed in the Cure of the Hare-lip, that is, when that Part of the ſuperior Lip, which is under the Noſe, is divided. But afterwards Surgeons, with great Succeſs, ventured to unite large and gaping Wounds of the pendulous Parts of the Body by the ſame Suture: But becauſe in the Hare-lip the Parts are divided from the Birth of the Patient, hence the callous Surface is on both Sides cut off with a Pair of Sciſſars, and in the ſuperior Angle a ſlight Wound is, alſo, made with the Sciſſars, that the Parts to be united may acquire the Nature of a freſh Wound; for if any thing of a callous Nature is left, there will never be a laudable Union of the Parts there. Then when the Lips of the Wound are duly applied to each other, the Needle is entered at the Diſtance of four Lines from the Wound, and forced thro' the Middle of the Subſtance of the Lips, till on the oppoſite Side the Needle emerges at the like Diſtance from the Wound. Thus the Needle is left in the Wound, and the Parts are retained in Union, by wrapping a Thread croſs-ways about it. According to the different Largeneſs of Wounds, more or fewer of theſe Needles are uſed, that in every Point the ſeparated Parts may be rendered perfectly contiguous. But leſt the ſharp Points of the Needles left in the Wound ſhould hurt the Patient, they are to be cut off by the Sciſſars, and ſmall Pieces of Sponge are to be laid under the Extremities of the Needles, be-

cauſe

cauſe theſe accommodate themſelves far better to the Figure of the Parts than Compreſſes. But that ſuch Needles may be paſſed through the Parts expeditiouſly, and without Vacillation, they are fixed in an Handle, becauſe by the Fingers of the Surgeon alone they cannot be ſo ſurely convey'd throught the Parts. Beſides, in order to avoid thoſe Misfortunes which might ariſe from the ſharp Extremities of the Needles remaining, (for hard Steel cannot be cut by Sciſſars without great Force, ſo that by this Concuſſion the Situation of the united Parts may be changed) Surgeons uſe Steel Needles, but whoſe poſterior Parts are made of pure Silver: Then paſſing the Needles through the Parts, they leave the Silver Part in the Wound, cutting off the Steel Part, together with a certain Portion of the Silver which is cut with a far leſs Force than Steel. The ſame Operation is, alſo, excellently performed by pretty large Steel Needles, which can be firmly held by the Fingers alone, and whoſe cloven Tops contain Silver Pins blunt at both Ends, which are left in the Wound, and ſecured by Threads paſſed about them. See *Garengeot, Traité des Operations de Chrirurgie, Tom.* 3.

When the united Parts are firmly grown together, theſe Pins are to be taken out, and the Wounds left by them are eaſily conſolidated.

The laſt Intention is anſwered by taking care, that the Parts correſpond to each other juſt in the manner they did in Health; and that they are thus retained in ſuch a manner as not to be too much preſſed, nor too much relaxed, by avoiding all burning, ſtyptic, and aſtringent Applications, but eſpecially by taking care, that the Preſſure be equal on all the Parts of the Wound.

All theſe Ends are obtained by doing as is above directed, and then applying mild deſiccative Medicines; and, laſtly, by waſhing the Cicatrix with ſpirituous Liquors.

We have already enumerated the four general Intentions of Cure in Wounds; and having conſidered the firſt three, we now come to treat of the fourth and laſt, which is, after having reſtored the loſt Subſtance, and united the Parts ſeparated by the wounding Cauſe, to induce a Cicatrix as like to the natural Skin as poſſible; for if there is only a ſimple Diviſion of the Parts made by a very ſharp Inſtrument, and the divided Parts are immediately united in their natural Situation, they will ſo grow together, as that no Mark of the inflicted Wound will be left; and in this Caſe the Wound is cured without a Cicatrix; for a Cicatrix after a perfect Cure of a Wound, is that Mark by which the Part of the Integument where the Wound was, is diſtinguiſhed from the adjacent Skin. The moſt perfect Cure, therefore, of a Wound is, when no Mark of it remains. But when this cannot be obtained, the Beauty of the Cure conſiſts in rendering this Mark as like as poſſible to the adjacent Skin; for when by the wounding Cauſe, or a Suppuration ſucceeding the Wound, any Part of the Subſtance of the Body is loſt, ſomething new will be generated in its ſtead, and this new Subſtance will never have abſolutely the ſame Qualities with that which was loſt. Hence it may be diſtinguiſhed from the adjacent Parts.

The Beauty of a Cicatrix depends principally on the three following Circumſtances:

1. If the Cure is ſuch, that the united Parts are in the ſame Situation they had before the Wound was inflicted.

2. If the Cicatrix does not riſe beyond the equable Surface of the adjacent Skin. And,

3. If the Cicatrix is not hollow.

The firſt is obtain'd by taking care that the Lips of the Wound, by means of adheſive Plaiſters, Suture, or proper Bandage, may correſpond to each other as in Health. The ſecond is obtain'd, if, by a moderate Preſſure, the Defect of the conſining Skin is ſupplied, leſt the Veſſels, depriv'd of this Covering, being diſtended by their Liquids, ſhould riſe above the equable Surface of the Skin; for when this is neglected, or the Wound treated with very emollient Medicines, a Ridge is form'd, and an unſeemly Cicatrix produc'd. And the third is obtain'd by procuring a laudable Reſtitution of the loſt Subſtance. An hollow Cicatrix generally happens, becauſe the Preſſure of the adjacent Skin forces the *Membrana Adipoſa* into the Place of the Wound, and makes it riſe, which there degenerating into *Sordes*, and fungous Fleſh, is by a Suppuration conſum'd, ſo as not to grow again. Hence the ſoft Fat, which ought to ſupport the Skin, being deſtroy'd, the Cicatrix will remain depreſſed and hollow. Hence it is obvious, that a deep and hollow Cicatrix cannot, often, be prevented, when, for Inſtance, the Fat is deſtroy'd by the wounding Inſtrument, or a violent Suppuration. Thus *Hippocrates*, in *Aph.* 45. *Sect.* 6. tells us, "That "if Wounds continue a Year, or longer, Abſceſſes will neceſ"ſarily happen in the Bone, and cauſe deep and hollow Scars." And in *Tr. de Ulceribus, Cap.* 4. he tells us, "That if a Part "of the Bone is remov'd, either by Burning, Cutting, or any "other Method, the Cicatrices of ſuch Wounds will be hol"low." It is ſufficiently known, what deep and unſeemly Cicatrices remain after the *Membrana Adipoſa* is conſum'd by venereal Ulcers.

Hence the Reaſon appears, why, if the Surgeon intends to form a beautiful Cicatrix, he ought to avoid burning, ſtyptic, and aſtringent Medicines: For by means of all theſe the live Veſſels are either deſtroy'd, or ſo conſtricted, as not to tranſmit the Fluids; but a Suppuration coming on, the mortified or obſtructed Extremities of the Veſſels muſt be ſeparated. Hence there will be a Loſs of Subſtance, a Conſumption of the Fat, and conſequently a proportionably hollow Cicatrix. Hence it is, alſo, obvious, how much the Beauty of the Cicatrix is aſſiſted by an equable Preſſure, which prevents the riſing of the too much diſtended Veſſels.

The Signs of a beginning Cicatrix are theſe following: The Margins of the Wound or Ulcer, about to be conſolidated, begin to appear more white and ſolid, and this Whiteneſs is gradually convey'd from all the Circumference to the Centre: In the mean time, in the open Surface of the Wound a like Whiteneſs begins to appear here-and-there; and if this Surface equably meets the Edges of the Lips, a laudable Cicatrix is form'd: A pure Wound, alſo, before moiſt in every Point of its Surface, becomes dry in thoſe Places where the white Rudiments of the Cicatrix appear. Hence thoſe cicatrizing or epulotic Medicines are always moſt commended, which are gently drying and corroborating. Hence Plaiſters prepar'd of Lead, or its Calxes, and the fine Powders of Colophony, *Olibanum*, and *Sarcocolla*, are generally with Succeſs applied to Wounds or Ulcers tending to a Cicatrix.

Cicatrizing and epulotic Medicines are theſe following; the red deſiccative Ointment, the *Unguentum Diapompholygos*, the *Unguentum Calcis*, the *Unguentum Nutritum*, the white Ointment of Roſes, the *Emplaſtrum Album Cœſium*, the *Emplaſtrum de Lapide Calaminari*, or the grey Plaiſters, the *Emplaſtrum de Minio Rubrum*, the *Sparadrapum* of *Gualtherus*, Colophony from boil'd Turpentine, and reduc'd to Powder; Frankincenſe, *Olibanum*, and Maſtich.

Hence we may perceive the Vanity, and fooliſh Boaſting, of thoſe who pretend, that, by their *Arcanums*, they can cure all Kinds of Wounds, without leaving a Cicatrix. Prudent and ſkilful Surgeons, after a large Loſs of Subſtance, or a long Suppuration, will never foretel that the Cicatrix will be beautiful; and of this the Patient ought always to be admoniſh'd, leſt he ſhould aſcribe the Deformity of the Part to the Careleſſneſs of his Surgeon.

It is, alſo, expedient, now-and-then to foment the Cicatrix with the Spirit of Roſemary, the *Spiritus Matricalis*, or ſome other of a like Nature; for all theſe ſpirituous Liquors have a Power of rendering the Fleſh of Animals firmer: For the Part of the Cicatrix remains weak, being only cover'd with a thin Pellicule; ſo that it is more eaſily hurt than the adjacent Parts. Hence it is often expedient, that the Part, after its Conſolidation, ſhould for a conſiderable time be cover'd with a mild lead Plaiſter, or a Piece of ſoft Alum Leather; leſt, by the Attrition of the Cloths, or the Injuries of the Air, the Wound ſhould again break out.

HÆMORRHAGE CONSIDER'D AS A SYMPTOM OF WOUNDS.

If a large Quantity of Blood flows from a Wound, by the Cauſes already ſpecified; it is to be ſtopt,

Firſt, By the actual Cautery.

Secondly, By Corroſives.

Thirdly, By Aſtringents.

Fourthly, By tying up the Artery.

Fifthly, By cutting quite thro', or entirely dividing the wounded Artery. And,

Sixthly, By Bandage, and pyramidal Compreſſes.

Having conſider'd the Things belonging to the general Cure of Wounds, we ſhall now treat of ſome Symptoms incident to them, which are often ſo violent, as greatly to endanger the Life of the Patient. Hence it is requiſite theſe Symptoms ſhould be remov'd, or at leaſt greatly diminiſh'd, before the Cure can be attempted. The principal Symptoms of this kind are, Hæmorrhages, Pain, and Convulſions.

A large and impetuous Diſcharge of Blood from a Wound, always denotes that large Veſſels, containing red Blood, are wounded, and eſpecially arterial Veſſels: Becauſe Veins, unleſs large, or render'd turnid by the Application of a Ligature, rarely diſcharge much Blood, and never with ſo great an *Impetus* as that which flows from the Arteries. If there is ſo great a Loſs of Blood, that fatal Effects are juſtly to be dreaded from it, and if there is no Hope that by a Debilitation of the vital Forces, or the Contraction of the Artery, it will ſpontaneouſly ſtop, then we are to have recourſe to the Methods known in Surgery, in order to ſtop the Eruption of the Blood. But moſt of the Means which check the Effuſion of the Blood, retard the Cure

of the Wound: For the Extremities of the Veſſels, being deſtroy'd by the actual Cautery, Corroſives, Ligatures, or Compreſſions, muſt be ſeparated, before the Conſolidation of the Wound can be obtain'd.

Various Means are uſed for ſtopping Hæmorrhages; but all of them act either by conſtricting the Orifice of the divided Veſſel, or by coagulating the Blood in the Extremity of the Veſſels, or by producing both theſe Effects at once.

1. The moſt inſtantaneous Method of ſtopping Hæmorrhages is reckon'd that of touching the Veſſel, diſcharging the Blood, with a red-hot Iron; for, by this means, the Blood is forthwith burnt into a thick Maſs, no longer capable of Reſolution: So that it cloſes up the Orifices of the open Veſſel. The Veſſel itſelf is, at the ſame time, ſhrivel'd up, and conſtricted, by the Action of the Fire; by the Concurrence of which two Effects, the Blood is ſtopt. This Method was long uſed by Surgeons; for which Reaſon, in the Amputation of Limbs, and in other Operations where a great Hæmorrhage was dreaded, they had always actual Cauteries, of various Figures and Sizes, in Readineſs; that, by their Application, they might ſtop the Blood.

Thus, by the later *Greeks* and *Arabians*, by *Paulus Ægineta*, *Avicenna*, and others, Hæmorrhages were ſuppreſs'd by the actual Cautery, after the Amputation of Limbs. *Guido de Cauliaco*, and after him ſome others, uſed boiling Oil for the ſame Purpoſe. *Veſalius*, in *Chirurg. Mag. Lib.* 5. *Cap.* 12. in the Amputation of Limbs, orders the Fleſh to be cut with a red-hot Knife, that by this means the Hæmorrhage may be ſtopt. But this Method is attended with ſo many Diſadvantages, that it is ſcarcely ever uſed; for it is a difficult Matter to procure a due Degree of Heat to the Iron; ſince, if it is too hot, that which is burnt is often carried off with it; and if it is not ſufficiently hot, the Hæmorrhage is not ſtopt by it. Beſides, actual Cauteries produce intenſe Pain, a violent Inflammation, and all its Conſequences; and all that which is deſtroy'd by the Burning, muſt afterwards, by a Suppuration, recede, and be ſeparated from the live Parts. Hence there is great Danger, leſt, the Eſchar falling off in a few Days, the Hæmorrhage ſhould return; in which Caſe, it is ſtopt with greater Difficulty than at firſt: For the cauterized Veſſel, when the Eſchar is fallen off, will be ſhorter; for which Reaſon it cannot at all, or at leaſt without the greateſt Difficulty, be laid hold of, and ty'd. Hence the cruel Application of the Cautery muſt be again repeated, whilſt the ſame Danger remains, leſt the Hæmorrhage return, after the new Eſchar is fallen off. Hence, after ſkilful Surgeons knew how to ſtop Hæmorrhages by a Compreſſion or Ligature of the Veſſels, the actual Cautery was more rarely uſed. And *Galen* himſelf condemns the Uſe of Eſcharotics, as unſafe in ſtopping Effuſions of Blood. For in *Method. Medend. Lib.* 5. *Cap.* 4. he tells us, "That as much of the Part as is burnt into a "Cruſt, ſo much of the natural Fleſh is loſt and remov'd "when the Cruſt falls off: For which Reaſon the Wound "appears naked, and without Fleſh; and in many, after the "Separation of the Eſchar, a Profuſion of Blood has happen'd, "which could not be ſuppreſs'd without great Difficulty." Hence *Galen* is againſt the Uſe of Eſcharotics, except in the greateſt Neceſſity; and he affirm'd, that they were principally uſeful where the Hæmorrhage proceeds from the Corroſion of the Veſſels, by a putrid Blood: For, by this means, the Blood is ſtopt, and the ſpreading Putrefaction forthwith deſtroy'd, by the Action of the Fire.

2. The Application of live Fire, by means of hot Irons, or the Uſe of boiling Oil, were call'd, ſimply, Cauteries, or actual Cauteries; but there are ſome highly acrid Remedies which deſtroy the Parts to which they are applied, and burn them into Eſchars, in the ſame manner as the Application of Fire does: Theſe, from the Similarity of their Effects, were, alſo, call'd Cauteries; but becauſe they did not actually contain Fire, they were diſtinguiſh'd from the others by the Epithet potential: They are, alſo, call'd Corroſives, becauſe, by corroding, they conſume and deſtroy the Parts to which they are applied; but the Eſchars, form'd by theſe, muſt, alſo, be ſeparated, and fall off: Hence ariſes the ſame Danger of a freſh Hæmorrhage as if actual Cauteries had been applied. Beſides, as all Corroſives are highly acrid, they often greatly irritate the adjacent nervous or tendinous Parts, whence it is certain violent Symptoms ſometimes ariſe. The moſt celebrated Remedy of the Antients, for this Purpoſe, was, *Cyprian* Vitriol, form'd into a ſmall Ball, or reduc'd into a fine Powder, laid upon Lint, and applied to the Orifice of the divided Veſſel: The Blood, almoſt by the ſingle Touch of this Vitriol, is coagulated into a *Thrombus*, which, like a Covering, cloſes up the divided Veſſel, conſtricts it, and burns its Extremity into an Eſchar; but a Ball of Vitriol cannot remain applied to the Orifice of the Veſſel, unleſs ſecured by a proper Bandage, which alone might prove ſufficient.

Corroſives are, white Vitriol, the *Lapis Infernalis*, and Oil of Vitriol.

Under the Article FIBRA, Aſtringents, ſo far as they ſtrengthen the Coheſion of the ſolid Fibres of the Body, are conſider'd; but here we only treat of the Uſe of Aſtringents in ſtopping Hæmorrhages: This Effect, then, they produce, either by conſtricting the Orifice of the divided Veſſel; or by coagulating the Blood as it flows out, ſo as to cloſe up the Orifice of the Veſſel; or by producing both theſe Effects at once: Beſides, there are, alſo, other Remedies, which, tho' they do not in a great meaſure coagulate the Blood, nor conſtrict the Veſſels, yet ſtop the Hæmorrhage, and in this reſpect only deſerve the Name of Aſtringents. Such are volatile Mill-duſt, the Powder of Plaiſter of *Paris*, and other bibulous Bodies, which abſorb every Liquid they touch, and, with it, grow into a pretty hard Maſs, which is capable of cloſing the divided Veſſel, and ſtopping the Hæmorrhage. But if large Arteries are divided, theſe Powders will be carried off by the *Impetus* of the diſcharg'd Blood: ſo that they are not much to be truſted to. Hence, after the Amputation of large Members, when Surgeons applied theſe bibulous Subſtances to the Surface of the Wound, both Night and Day a Servant was order'd to preſs the whole *Apparatus* with his Hand, that they might remain firmly applied. Hence it is obvious, that little is to be expected from theſe bibulous Subſtances, unleſs they are ſecur'd and aſſiſted by a proper Compreſſion.

Among the Remedies which act by coagulating the Blood, or conſtricting the Veſſels, the moſt celebrated is *Alcohol*, eſpecially when warm, which in a Moment converts the *Serum* of the Blood, notwithſtanding its Fluidity, into a ſciſſile Maſs, and at the ſame time ſtrongly contracts the ſolid Parts of the Body. Hence the ſoft Parts of Animals, preſerv'd in *Alcohol*, become hard, and are diminiſh'd in Bulk: By both theſe Effects *Alcohol* may effectually ſtop Hæmorrhages. But the Extremity of the divided Veſſel, being, by the Application of the *Alcohol*, contracted and indurated, will afterwards be ſeparated; and the *Thrombus* of Blood, harden'd by the *Alcohol*, will either be remov'd ſpontaneouſly, or protruded by the *Impetus* of the Blood acting upon it. Hence the Hæmorrhage will return, unleſs, by a proper Bandage and Compreſſion, the *Thrombus*, form'd by the *Alcohol*, is retain'd in the Orifice of the divided Veſſel. Beſides, by the Heat of the Body, the volatile *Alcohol* is immediately diſſipated: Hence its Action is only momentaneous, unleſs it is continually applied afreſh, and its too ſudden Exhalation prevented, by the Application of a Bladder anointed with Oil. It is therefore obvious, that the Uſe of *Alcohol* is not ſafe without a proper Compreſſion. *Vanſweiten* gives a memorable Inſtance, in which the Blood flowing from a very ſmall Artery could not be ſtopt by *Alcohol*. Hence it is obvious, that if Hæmorrhages from ſmall Arteries cannot ſometimes be ſtopt by *Alcohol*, it may, alſo, often prove fallacious, in Caſes where large Arteries are divided.

Oil of Turpentine, unleſs hot, ſcarcely ſtops Hæmorrhages. The ſoft Parts of Animals, immerſed in this Oil, become hard, tho' ſlowly; but Oils require a far greater Degree of Heat, before they boil, than Water: Hence warm Oil of Turpentine, by burning the Solids, and coagulating the Blood, may ſtop an Hæmorrhage; in which Caſe, it will act like an actual Cautery, which is already deſcribed. But highly ſtrong and acrid foſſil Acids, ſuch as the Spirits of Nitre and Sulphur, are Corroſives, of the Uſe of which we have already treated. But the other mild Aſtringents, ſuch as Dragon's-blood, the Bark and Flowers of Pomgranates, and others of a like Nature, ſeem not to be ſo efficacious, that much Good can be expected from them alone, in ſtopping Hæmorrhages. Hence, alſo, it appears, what Judgment we are to form of the many ſtyptic *Arcanums* ſo much extol'd by many Surgeons. Small Arteries, and even ſuch as are conſiderably large, when entirely divided, cloſe ſpontaneouſly, eſpecially when the vital Principle is weaken'd by a liberal Hæmorrhage. Many of theſe boaſted Specifics were acrid Corroſives, and others of them milder Corroſives, which were, by Bandage, preſſed to the wounded Veſſel: Hence the Blood was often ſtopt rather by the Compreſſion alone, than by the Application of the Remedy. Whilſt *Petit*, as he tells us in *Mem. de l'Acad. des Sciences, l'An.* 1735. about the End of the laſt Century, made many Experiments, with reſpect to theſe *Arcanums*, he found, that ſlight Hæmorrhages might ſometimes be ſtopt by them; but that, in the Amputation of Limbs, they did not produce the deſir'd Effect. Hence it is obvious, that thoſe who boaſt of ſuch *Arcanums*, are not raſhly to be truſted.

Aſtringents are,

1. Thoſe Subſtances which contract the Veſſels, ſuch as *Alcohol*, Spirit of Turpentine, recent Juice of unripe Quinces, Dragon's-blood, Puff-ball, and *Crocus* of *Mars*.

2. Thoſe Subſtances which coagulate the Blood; ſuch as *Alcohol*, Spirit of Nitre, Spirit of Sulphur, calcin'd Vitriol, Sugar of Lead, the Bark and Flowers of Pomgranates, and the Blood-ſtone.

4. If

4. If the Surgeon's Hand can have Acceſs to the divided Artery, ſo as that it may be ty'd, the Hæmorrhage will ſoon be ſtopt, by the Application of a Ligature. This Method was commended by *Galen:* For, in *Method. Medend. Lib.* 5. *Cap.* 3. after having enumerated various Methods of ſtopping Hæmorrhages from Wounds, he adds, "Another Method of cloſing the Extremities of the Veſſels is, by applying a Ligature to them, or by compreſſing and conſtricting them with the Fingers." But he ſeems to have uſed this Method only in Wounds: For, ſo far as I remember, he has not deſcrib'd the Amputation of ſphacelated Limbs. In Amputations of the large Limbs, where violent Hæmorrhages are dreaded from a Diviſion of large Arteries, *Celſus*, in *Lib.* 6. *Cap. ult.* makes no mention of the Ligature of the Veſſels; tho', in *Lib.* 5. *Cap.* 26. when deſcribing the Cure of Hæmorrhages from large Wounds, he tells us, that when all other means have been tried in vain, "the Veins, diſcharging the Blood, are to be laid hold of, and "about the Part where the Wound is made, ſo ty'd in two "Places, that they may unite, and have their Orifices cloſed up." After *Galen*, all Phyſicians and Surgeons ſtopt the Hæmorrhages, ſucceeding Amputations, with Cauſtics; and *Veſalius*, in *Chirurg. Magn. Lib.* 5. *Cap.* 12. when deſcribing this Operation, orders the Fleſh to be cut to the Bone with an ignited Razor, and the large Veſſels to be afterwards burnt with ignited Irons. As *Paré* abhor'd this cruel Method, and obſerv'd that many, on whom it was practiſed, died, and that only a few eſcaped, after the moſt intenſe Pain, he was the firſt, as he informs us, in *Lib.* 12. *Cap.* 35. who ty'd the Veſſels after Amputations, drawing them out with a Forceps, and with a double Thread tying them together with a Portion of the adjacent Fleſh: But if the Ligature ſlipping off, the Hæmorrhage return'd, he with a Needle perforated the fleſhy Parts adjacent to the divided Veſſel, and, by drawing the Thread upon a Compreſs applied, he cloſed the Orifice of the divided Veſſel, as he tells us in the ſame Book, *Cap.* 33. Afterwards, almoſt all Surgeons, neglecting actual and potential Cauteries, uſed Ligatures, which they applied two Ways; for they either drew out the Extremity of the divided Artery with a Forceps, and ty'd it by paſſing a Thread about it; but if the Thread was too tightly applied, it often gradually cut the Artery; in conſequence of which, the ty'd Extremity fell off too ſoon, and the Hæmorrhage not only return'd, but was more dangerous than before; becauſe the Veſſel, being render'd ſhorter, could not be ſo eaſily cloſed by a new Ligature: Hence *Dionis*, in his *Cours d'Operations de Chirurgie*, *Demonſtrat.* 9. after the Thread is paſſed about, and a Knot ty'd on it, orders, that one End of the Thread ſhould, by a Needle, be paſſed thro' the Subſtance of the Veſſel, in order to hinder the Ligature from falling off too ſoon. But this Method, as being too difficult, was afterwards rejected. But if a ſlight Ligature is applied to a naked Artery, the Blood, continually acting on the Part ty'd, protrudes the Ligature, and makes it fall off: So that *Paré*'s Method prevail'd, which is, tying the Artery together with a Part of the adjacent Fleſh; for thus the Extremity of the Artery is excellently cloſed; nor is there any Danger of the Ligature's ſlipping off ſo eaſily. It will be ſufficiently obvious, that tying the Veſſels is preferable to burning them, if we conſider the following Circumſtances: Whilſt by live Fire, or potential Cauſtics, the Extremity of the Veſſel is burnt, and the Blood in it coagulated, the burnt Parts produce an Eſchar, which covers the Orifice of the divided Veſſel; to this Covering there adheres a *Thrombus* of coagulated Blood, which fills the Cavity of the divided Artery; and when the Eſchar falls off, the *Thrombus* alone, lodg'd in the Cavity of the Veſſel, ſuſtains the *Impetus* of the impel'd Blood: But the Extremity of the Veſſel, being open by the Separation of the Eſchar, will eaſily tranſmit the *Thrombus*, which will therefore be expel'd, and make a free Paſſage for the Eruption of the Blood: But whilſt the Veſſel is cloſed by Ligature, its Sides will be brought together, and hence the *Thrombus* beyond the Ligature will touch it with a narrow Apex, whilſt its broader Baſis will block up the Cavity of the Veſſel. After, therefore, by a Suppuration, the Part ty'd, together with the Thread, falls off, tho' the Artery is not, as yet, totally conſolidated, yet the *Thrombus*, being broader at its Baſe, cannot be tranſpreſſed thro' the narrow Extremity of the contracted Artery: Perhaps the narrower Part of the *Thrombus* may come out, but its larger Part will cloſe up the Veſſel, and ſtop the Hæmorrhage. Mr. *Petit*, in *Mem. de l'Acad. des Sciences*, *l'An.* 1731. has beautifully explain'd this, and illuſtrated it by the Addition of a Figure of the *Thrombus*.

This Method is, therefore, far more ſafe than any of the reſt, tho' it is not abſolutely free from Diſadvantages; for it is often ſucceeded by an intenſe Pain, and violent Inflammation, whilſt the Arteries are ty'd, together with the adjacent Fleſh, eſpecially if the divided Nerves are at the ſame time comprehended within the Ligature. Hence convulſive Motions often happen in the Part, by which the Ligature may be deſtroy'd, and the Hæmorrhage return.

5. The entire Diviſion of the Artery is principally uſeful when the wounded Artery, being neither too large, nor too near the Heart, is only partially divided; for, in this Caſe, the Hæmorrhage will proceed, becauſe the Fibres being retracted by their own Elaſticity, the Wound of the Artery will be enlarg'd: But if ſuch an Artery is entirely divided, we have already ſhewn, that its Extremities recede, and are conceal'd under the adjacent Parts, where, by their own Contractility, and the Preſſure of the contiguous Solids, they are entirely cloſed, and the Hæmorrhage is, by that means, ſtopt. When, therefore, the Blood continually flows in a ſmall Quantity from a Wound, the Place of the Wound whence the Hæmorrhage ſeems to proceed is to be ſcarified with a Knife, in order to make a total Diviſion of the wounded Artery. *Galen*, in *Tr. de Curandi Ratione per Veneſectionem*, *Cap. ult.* tells us, that he uſed this Method with Succeſs, "in "a Man who by a Wound in the *Malleolus* had the Artery wounded, in ſuch a manner, that the Hæmorrhage did not ceaſe, till "*Galen*, being call'd, made a total Diviſion of the Artery." He afterwards adds, that the Wound was cur'd without an *Aneuryſm*, which is greatly to be dreaded in ſuch a Wound of an Artery, whilſt the weak Cicatrix is, by the Blood, extended into a dilated Sack.

But it eaſily appears, that ſuch an entire Diviſion is not ſafe, unleſs the Artery is ſmall, and not near the Heart: For, in this Caſe, the Hæmorrhage would not ceaſe, tho' the Artery was entirely divided; but the divided Veſſel muſt be cloſed up by a Ligature, or ſome other Method.

It has happen'd, that an Artery wounded, and not entirely divided, has been ſo ſecur'd by Compreſſion, that the Blood has ſtopt; but, in this Caſe, ſo ſtrong a Compreſſion of the Artery is not always requiſite, as entirely to abolish its Cavity: Such a Compreſſion is ſufficient, as hinders the free Efflux of the Blood from the Wound of the Artery, and retains the bloody *Thrombus* between the Lips of the Wound, which is the principal Impediment to the Diſcharge of the Blood; and which, afterwards, growing firmly to the Margins of the Wound, reſtores the Soundneſs of the wounded Part. An Inſtance of this is found in *Mem. de l'Acad. des Sciences*, *l'An.* 1735.

6. Compreſſion of the divided Veſſel is, of all others, the beſt, and moſt natural Method, of ſtopping Hæmorrhages, and that which all Men ſpontaneouſly uſe when they ſee the Blood flowing from a Wound, that is, by compreſſing the wounded Part with their Fingers. But this Compreſſion may act either perpendicularly on the open Surface of the divided Veſſel, or it may be applied to the Sides of the Veſſel, and thus render them contiguous to each other. In the former Caſe the Efflux of the Blood is hinder'd; but as the *Thrombus*, form'd by the coagulated Blood, is of the ſame Bulk with the Orifice of the Wound, when the Compreſſion is remov'd, it is eaſily expel'd, by the *Impetus* of the Blood acting upon it. Hence, in this Caſe, the Preſſure ought to act upon the divided Veſſel till the *Thrombus* of coagulated Blood is concreted with the Sides of the Veſſel, which does not happen ſoon: But ſuch a Compreſſion, when ſtrong, and long applied, may produce many bad Symptoms; an Inflammation, for Inſtance, and all its Conſequences.

But if the compreſſing Cauſe acts on the lateral Part of the divided Veſſel, its Sides will come together, and, being render'd contiguous, will grow together in a pretty broad Surface: And as the *Thrombus* of coagulated Blood, lodg'd behind the compreſs'd Part, is almoſt cylindrical, it cannot be forc'd out by the Sides of the Veſſel, tho' a perfect Union is not, as yet, form'd. It is therefore ſufficiently obvious, how much this Method is preferable to all others: For if the Aperture of the Veſſel is only cloſed, the Hæmorrhage ceaſes. But this is excellently obtain'd by ſuch a Compreſſion, and the contiguous Sides of the Veſſel will ſoon grow together, without any Neceſſity for a Separation of the mortified Parts, which muſt happen after the Application of actual and potential Cauſtics, and even after the Ligature of the Veſſels: Beſides, when the Veſſel is ty'd, there is only an Union of its Sides in a ſmall Surface, where the Thread is plac'd: But, by a lateral Preſſure, the Sides of the flatten'd Veſſel are united in a greater Surface; for which Reaſon they will adhere more firmly, and make a ſtronger Reſiſtance to the Action of the Blood attempting its Diſcharge. But the Parts never ſooner and better grow to each other, than when they are divided by a recent Wound; for, in this Caſe, only the Union of the Parts is requiſite, and Nature performs the reſt. But this is moſt perfectly obtain'd by this Method, whilſt to the raw Wound, not irritated by Corroſives or Ligatures, ſuch a Compreſſion is applied in thoſe Parts where large Veſſels are divided.

But that the Hæmorrhage may be happily ſtopt, and the Wound at the ſame time cur'd, it is principally requiſite, that the Preſſure ſhould act only on the Sides of the divided Veſſel, but not on the reſt of the Surface of the Wound. Hence Sur-

geons prepare a ſmall Ball of Paper, long chew'd between the Teeth, or of Lint, which they apply to the Part of the Wound which ought to be compreſs'd; upon this they lay one ſomewhat larger, and over it one ſtill larger, and ſo on, till the *Apparatus* is ſo prominent, that, by a Bandage, it may be commodiouſly preſs'd to the divided Veſſel; for thus an inverted Pyramid, as it were, is form'd, whoſe Apex, being applied to the Side of the Veſſel, only communicates the Preſſure of the Bandage applied, to that Part of the Wound where it is requiſite. *Petit*, in *Mem. de l'Acad. des Sciences*, *l'An.* 1731. has deſcrib'd and repreſented, by a Table, a beautiful Inſtrument, by the Application of which, the divided Veſſel might be ſafely compreſs'd, and the Trunk of the Artery above the Wound contracted at Pleaſure: The Compreſſion, alſo, of the divided Veſſel, may be augmented or diminiſh'd, at Pleaſure, by the Uſe of the ſame Inſtrument, the Sureneſs, Safety, and Uſe of which, he has there confirm'd, by a memorable Example. See TORCULAR.

It is therefore obvious, that an artificial Compreſſion of the Veſſel ſtops the moſt dangerous Hæmorrhage, when other Remedies have been try'd to no Purpoſe; and that this alone is ſufficient, in all Caſes; whereas the other Remedies are only uſeful in particular Circumſtances. But this Compreſſion acts beſt, if, being apply'd to the Side of the divided Veſſel, it compreſſes its open Orifice, tho' in the moſt difficult Caſes a perpendicular Preſſure on the Surface of the divided Veſſel has ſometimes happily ſtopt Hæmorrhages; a memorable Inſtance of which is found in *Mem. de l'Acad. des Sciences*, *l'An.* 1732. It ſometimes, alſo, happens, in the Amputation of a Leg, that the Artery which perforates the ſuperior and poſterior Part of the *Os Tibiæ*, and ſometimes runs an Inch thro' the Subſtance of the Bone, being divided, continues perpetually to diſcharge the Blood, if, being lodg'd in that bony Canal, it is by the Saw divided with the Bone. It is ſufficiently obvious, that in this Caſe a Ligature can be of no uſe: And in the laſt-quoted Part of the *Mem. de l'Acad. des Sciences*, we have an Inſtance, in which Compreſſion alone, by Lint apply'd to the Orifice of the divided Veſſel, remov'd ſo dangerous a Symptom.

But in Caſes of this kind a ſtronger Compreſſion is requiſite, than if, by lateral Compreſſion, the Sides of the flatten'd Veſſels were render'd contiguous; becauſe the Largeneſs of the divided Veſſel remains always the ſame. Hence the *Thrombus* of concreted Blood, cloſing up the divided Veſſel, may be eaſily expel'd, unleſs it is retain'd by a ſtrong Compreſſion.

In this Caſe Revulſion is of no Service, unleſs the wounded Arteries are ſmall, and there is a *Plethora*. The ſame is true with reſpect to Aliments, Drink, and internal Medicines: What has been ſaid of an Hæmorrhage, may be apply'd to a Flux of Ichor; tho' the greateſt Help we have, in this Caſe, is from the thicker Balſams.

In this Caſe Revulſion is of no Service. *Galen*, in *Method. Medend. Lib.* 5. *Cap.* 3. when laying down the Method of ſtopping Blood diſcharg'd from Wounds, tells us, that this is done "by cloſing up that which is divided, and by deriving and "tranſlating what was carried thro' it, to ſome other Part." But as he was ignorant of the modern Doctrine of the Circulation of the Blood, it is not to be wonder'd at, if he embrac'd the Opinion, that Revellents may be of great Uſe in ſtopping Hæmorrhages from Wounds. But if a large Artery is divided, Veneſection in another Part of the Body will be of no Uſe, ſince the Blood will certainly flow thro' the open Wound of the Artery, till the Patient dies, or, at leaſt, falls into a *Deliquium*. I ſaw, ſays *Vanſwieten*, an Inſtance, in which repeated Veneſection could not ſtop the Hæmorrhage ariſing from the drawing of a Tooth. It can therefore be of no Uſe when a large Artery is divided, ſince it cannot prevent the Efflux of the Blood from ſo ſmall an Artery; nor can any Good be expected from other Revellents, which act by any Friction or Irritation of the Parts diſtant from the Wound, ſince they are rather injurious, becauſe they increaſe the Motion firſt in the Part, and then in the whole Body.

But where there is a large Quantity of Blood, and when that Quantity is not ſufficiently diminiſh'd by the Hæmorrhage, Veneſection may be beneficial, where the wounded Veſſels are ſmall; that the Quantity and *Impetus* of the Blood being diminiſh'd, the wounded Veſſels, when not too much diſtended, may contract themſelves.

As for Aliments and Drink; when an Hæmorrhage is ſtopt by the Remedies ſpecified in the preceding Aphoriſm, we ought always carefully to avoid ſuch Aliments and Drinks which can ſuddenly too much increaſe the Quantity and *Impetus* of the Blood till the wounded Veſſel is ſufficiently conſolidated: And in this Reſpect a proper Regimen with regard to Diet, is of great Importance. But it is ſufficiently obvious, that nothing can be expected from it, in order to ſtop the Hæmorrhage; for an exceſſive Loſs of Blood requires a preſent Remedy: And tho' it ſhould be granted, that Meat and Drink could contribute any thing to this Effect, yet too great a Time is requir'd, before the Chyle, produc'd from the Aliments, can come to the Wound. The ſame holds true with reſpect to Medicines taken internally, which are, by ſome, falſly ſaid to be efficacious in ſtopping Hæmorrhages: For it appears, from what has been ſaid, that the ſtrongeſt Aſtringents cannot ſo ſtop a dangerous Hæmorrhage, that they may be ſafely truſted to, even tho' applied in large Quantities to the divided Veſſel. Nothing is, therefore, to be expected from them whilſt, being taken internally, mix'd with the Blood, and chang'd by the Force of the Body, they are, by the Action of the Circulation, convey'd, in a ſmall Quantity, to the wounded Part: For, in this Caſe, they will paſs thro' the open Orifice of the Wound, along with the Blood. Beſides, all the Remedies capable of ſtopping an Hæmorrhage, produce their Effect by conſtricting the Veſſel, or by coagulating the Blood, or by doing both theſe at once. If, therefore, theſe Remedies, when mix'd with the Blood, and flowing thro' the Wound, had ſuch a Quality, they would prove mortal, by conſtricting the minute Veſſels of the Lungs, or coagulating the Blood, and ſo hindering its Paſſage thro' the Lungs, before they could come to the wounded Part. When ſmall divided Arteries, by their proper Contractility, and a Diminution of the *Impetus* of the Blood, in conſequence of the Loſs of it, are ſpontaneouſly cloſed, as is already obſerv'd, then the ſtoping of the Hæmorrhage, which is owing to quite different Cauſes, is aſcrib'd to the Uſe of ſuch Remedies, many of which are greatly extol'd, and may be ſafely exhibited, ſince they neither do Harm, nor Good. No prudent Surgeon will, however, confide in them, and, neglecting more efficacious Remedies, expoſe his Patient to the greateſt Danger.

As for a Diſcharge of Ichor; it ſometimes happens that Wounds, even of a ſlight kind, are accompanied with a terrible copious Diſcharge of thin Lymph, the large arterial lymphatic Veſſels being probably wounded; ſince it is hardly to be ſuppoſed that the venous lymphatic Veſſels, being divided, could diſcharge ſo large a Quantity of Lymph; becauſe the ſanguiferous Veins, when wounded, unleſs they are very large, diſcharge but a very ſmall Quantity of Blood, unleſs a Ligature, or ſome other Obſtacle, is plac'd between the Heart and the Wound. But we ought carefully to diſtinguiſh that Flux of Ichor which ariſes from Wounds of the lymphatic Veſſels, from that which ſucceeds Punctures of Nerves and Tendons, or violent Inflammations: For, as we have already obſerv'd, far other Remedies are requiſite in the latter, from thoſe proper in the former Caſe. Here we only treat of that Flux of Ichor which ariſes from Wounds of the Veſſels; in which Caſe, the Remedies proper for ſtopping Hæmorrhages, may be beneficial. We have already obſerv'd, that an artificial Compreſſion of the Veſſel was the ſafeſt, and moſt efficacious Method of ſtopping Hæmorrhages, even of the moſt violent kind. It is, alſo, certain from Experience, that the ſame Method may remove a Flux of Ichor: Of this we have a memorable Inſtance in *Ruyſch. Obſerv. Anatom. Chirurg. Centur. Obſ.* 41. But when a Flux of Ichor ſucceeds the Puncture of a Nerve, ſuch a Compreſſion would ſoon make the inflam'd Parts paſs into a Gangrene. Excellent Effects are, alſo, produc'd by the native Balſams, eſpecially of the thicker kind, which, by their oleous Lentor, are capable of cloſing up the Wound of ſuch a Veſſel, and are obſerv'd to be friendly and ſalutary to the wounded Parts, tho' they are only uſed in Punctures of the Nerves and Tendons: And when theſe are applied pretty warm to the Wound, as they generally are, perhaps the tender Veſſels, by the greater Heat, contract and cloſe themſelves.

PAIN CONSIDER'D AS A SYMPTOM OF WOUNDS.

If any nervous Fibre, ariſing from the Brain, is ſo extended as to threaten its Diſſolution, the Idea of Pain is produc'd.

Pain is a Perception, in the Mind, of ſomething which produces Uneaſineſs, and to which we have naturally ſuch an Averſion, that, with our utmoſt Efforts, and even without the Concurrence of our Will, we mechanically attempt the Removal of that which we believe to be the Cauſe of the ungrateful Perception: For a ſound Perſon has a Power which he can by no means remove from himſelf, of perceiving certain Ideas, on account of a Change induc'd on ſome Nerves. If an ignited Iron is apply'd to any Part of the Body of a Philoſopher, wrapt up in the moſt profound and abſtruſe Meditations, the Train of his Thoughts is immediately chang'd, and that ungrateful Perception, call'd Pain, forthwith excited in his Mind. But it is impoſſible, by Words, to explain what that Perception in the Mind is, ſince it is only known to him who endures the Pain; for there is not form'd in the Mind a Repreſentation of any Object different from the Thought of the Pain, but there is a perceiving Power preſent: For no one, when in Pain, imagines that

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there is without himſelf any external Object ſimilar to that Pain which he feels; but all affirm, that they themſelves are in Pain.

The Idea of Pain, properly ſpeaking, leaves in the Mind no Remembrance of itſelf; for the Perſon who is in Pain, and is next Moment freed from it, is ſenſible, indeed, that the Cauſe of Pain was preſent; but he has no longer an Idea of Pain, nor can he, by any means, excite it in his Mind, without the Preſence of a freſh Cauſe of Pain, which, firſt changing his Body, may induce a proportionable Change on the Ideas of his Mind.

But what that Change of the Body is, and in what Parts it happens, from which the Idea of Pain ariſes in the Mind, we may know from Experiments: For it is demonſtrable, that only the Nerves ariſing from the Brain are capable of being ſo affected, as to excite the Idea of Pain in the Mind: For if a Nerve, which is alone diſtributed to any Part of the Body, is deſtroy'd, ſuch a Part may be cut, or burnt, without exciting the Idea of Pain in the Mind, tho' all the other Parts remain ſound: But all the Nerves in the Body ariſe either from the *Medulla Oblongata*, which contains the medullary Subſtance of the *Cerebrum* and *Cerebellum*; or from the ſpinal Marrow, which is a Continuation of the *Medulla Oblongata*, and, beſides, contains a medullary Subſtance, ariſing from its own cortical Part: Yet that Affections of thoſe Nerves only, which ariſe from the medullary Subſtance of the *Cerebrum*, are capable of exciting the Ideas of Pain in the Mind, is obvious from this, that in all thoſe Diſorders in which the Action of the *Cerebrum*, by means of the Nerves, is remov'd, no Pain is felt. Perſons exceſſively drunk, or perfectly apoplectic, in conſequence of the Humours extravaſated in the Brain, have no Senſe of Pain, tho' live Fire is apply'd to the Parts of the Body; the ſame, alſo, frequently happens to Patients under exceſſive epileptic Fits: Hence it appears, that a Change of thoſe Nerves alone which ariſe from the Brain, is capable of exciting the Idea of Pain in the Mind: But this Change of the Nerves ariſing from the Brain, which is capable of exciting the Idea of Pain, ſeems to be ſuch a Diſpoſition of them as if long continu'd, or render'd very intenſe, would produce a Solution of Continuity in theſe Nerves: For if the healthieſt Perſon, who has no Pain in any Part of his Body, and has no Fault either in his Solids or Fluids, is prick'd under the Nail of the Finger or Toe, with the ſmalleſt Pin, an exceſſive Pain, capable of rendering the Patient convulſive, immediately ariſes, only from ſuch a mechanical Change of the nervous *Papillæ*: Nor is it of any Importance what the Cauſe is, or how it acts; for, provided it ſo diſpoſes ſuch a nervous Fibre ariſing from the Brain, that it is very near to a Rupture, without breaking (for when the Nerve is deſtroy'd, the Pain ceaſes), that ungrateful Perception call'd Pain will be excited in the Mind.

But that the chang'd Condition of the Nerve may produce the Idea of Pain in the Mind, it is requiſite the Action of this Nerve on the Brain, and of the Brain on it, ſhould remain free and uninterrupted by any Obſtacle: For if the Nerve, in its Courſe, is ty'd, tho' its Extremity ſhould be diſtracted, lacerated, or cut, the Senſe of Pain will not be excited in the Mind. The ſame will happen, if, whilſt the Nerve remains free in all its Courſe, the Functions of the Brain are injur'd: Hence it is obvious, that, by this Change of the Nerve, ſomething is chang'd in the Brain; and that, from this Change in the Brain, the Idea of Pain ariſes in the Mind. It therefore ſeems highly probable, that the Idea of Pain may ſometimes ariſe in the Mind, tho' no Change happens in the Nerves; that is, when the Brain, from any other Cauſe, receives ſuch a Change as it would have receiv'd, if a nervous Fibre, in any Part of the Body, had been ſo diſpos'd, as to be in Danger of a Diſſolution. This is confirm'd by practical Obſervations; for it frequently happens, that thoſe who, by the Calamities of War, or other Misfortunes, loſe their Legs, complain of a Pain in the Toes of the Leg they have loſt: And in ſome it has been obſerv'd, that a Senſe of ſuch a Pain was the Sign of imminent Convulſions; the Brain, which is the Origin of all the Nerves, being chang'd. Nor does this happen only ſoon after the Amputation, but a long time after. See *Miſcellan. Curioſ. Decur.* 1. *An.* 2. and *Hildan. Obſ. Chirurg. Cent.* 3. *Obſ.* 15. Whilſt, therefore, in ſome Perſons, the Brain, which is ſubſervient to Senſation and Motion, and from which all the Nerves ariſe, is more eaſily affected than in others, the former will be obnoxious to many Diſorders and Pains, which they aſcribe to external Cauſes, but which really derive their Origin from the too eaſy Mobility of the common Senſory.

Hence, when *Sydenham*, as he tells us, in *Diſſert. Epiſtolar.* perceiv'd that Veneſection, Purging, and ſome other Meaſures, were of no Uſe in thoſe ſurpriſing Diſorders which proceed from a diſturb'd Motion of the Spirits, he concluded, "That as "the exterior Portion of a Man's Body conſiſted of Parts ob- "vious to the Senſes; ſo, without doubt, his interior Frame is "to be conſider'd as conſiſting of a due Series, and, as it were, "Fabric of Spirits." But this interior Frame, being intimately "join'd, and, as it were, united with the Conſtitution of the "Body, is more eaſily or difficultly chang'd from its proper "State, according to the greater or leſs Strength of the con- "ſtituent Principles we receive from Nature." Hence, in ſuch Diſorders, when Pains, in various Parts of the Body, reſembled the moſt different Diſtempers, he juſtly accus'd the Irregularity, and inordinate Motion, of the animal Spirits alone, and apply'd the Whole of his Care and Skill only to ſooth and regulate them; by which means, he knew, from Experience, all the Pains, and Variety of Symptoms, which in this Diſeaſe imitated the moſt different Diſtempers, were mitigated. This is ſufficiently confirm'd by this, that, in delicate Conſtitutions, Perturbations of Mind alone are able to produce a Train of terrible Symptoms, tho', immediately before, no manner of Change was diſcover'd in the Solids and Fluids.

If, therefore, we ſhould ſuppoſe that all the perceiving Points in the Body remain, and that all the not-perceiving Points were aboliſh'd, we ſhould have an Idea of that interior Frame mention'd by *Sydenham*; but, by this means, a great many Parts of the Body would be taken away. The whole Heart, ſo much agitated and inflam'd in the moſt acute Diſtempers, is not itſelf ſenſible of Pain, but an uneaſy Senſe of Anxiety ariſes; the whole Lungs are often conſum'd by a purulent *Tabes*, without any Pain: The ſame, alſo, happens to the Kidneys, tho', at the ſame time, the *Pelvis*, and interior Membrane of the Ureters, when indiſpos'd, are ſubject to intenſe Pains. The whole Liver is ſometimes conſum'd by an Abſceſs, without any Pain; but if the exterior Membrane of the Liver is affected, an intenſe Pain is preſent.

The Idea, therefore, of Pain, in the Mind, follows ſuch a Diſpoſition of a nervous Fibre in the Body, as endangers its Diſſolution; tho', at the ſame time, it ſeems highly probable, that the Idea of Pain may be excited, tho' no Change happens to the Nerves, but only to the Brain, from which theſe Nerves derive their Origin. Nor does this appear only in thoſe Nerves which, as it were, guard the Body, and, being diſpers'd every-where, warn the Perſon to remove or avoid every thing, which, being about to act, or at preſent acting, would deſtroy the Part: But we, alſo, obſerve, that the ſame infallibly happens in other Nerves, from a Change of which, the moſt diſtinct Ideas ariſe in the Mind, and ſuch as are equally lively with any others, tho' no external Object has acted on the Organs of Senſe, but a Change is only induc'd in the common Senſory by Diſeaſes. Thus phrenetic Patients ſee ſtrange Objects, and frequently hear terrible Noiſes, tho' there is no external Object to excite theſe Ideas, by inducing a Change of the Nerves. The ſame happens in melancholic *Deliriums*, and maniacal Ravings.

The Pain is the more intenſe, the nearer the Fibre is to a Rupture; and the gentler, the nearer it is to its natural Tenſion.

Since, from the Definition of Pain, it is obvious, that Pain is perceiv'd when a nervous Fibre is ſo diſpos'd as to be in Danger of a Diſſolution; it naturally follows, that the Pain is the more intenſe, the more the Cauſe, exciting it, diſtracts the Fibres; provided the Coheſion, as yet, remains: For when the Coheſion is deſtroy'd, the Pain ceaſes; and, on the contrary, the leſs the Diſtraction of the Nerve is, the leſs will the Senſe of Pain be. This is obvious, in the Racks us'd by Judges, in order to extort from Malefactors a Confeſſion of their Crimes: For, hanging the Perſon up by the Hands, they apply to his Feet Weights, which are gradually increas'd: Hence, by the greater Diſtraction of the Parts, the Pain is gradually increas'd, to the greateſt Degree; but as ſoon as theſe Weights are remov'd, the Pain is diminiſh'd. Many Nerves, in the human Body, are ſo lax, that they bear Extenſion without any Pain; but when the Nerves, diſpers'd thro' the *Perioſteum*, are ſtretch'd upon the Bones, the ſmalleſt Increaſe of Tenſion produces the moſt intolerable Pain. Hence ariſe thoſe exceſſive Pains, whilſt, in a *Lues Venerea*, bony Tumors diſtend and dilacerate the incumbent *Perioſteum*. Hence ariſes the Severity of that ſort of Torment us'd by Executioners, when, by a Screw, they force the *Perioſteum* on the Spine of the *Tibia*, to the hard Bone, gradually augmenting the Preſſure. For the ſame Reaſon, the moſt intenſe Pains happen in the ſmalleſt Nerves: For the largeſt Nerves have but a ſmall Part of their Bulk which may be call'd truly nervous. Hence it may eaſily happen, that ſuch large Nerves may be diſtended without a Diſtraction in their nervous Fibrils, but only in the callous Coats covering thoſe Fibrils. But when a Nerve is ſmall and tenſe, and eſpecially when it is deſtitute of ſuch Coats, an intenſe Pain is produc'd in it by the ſlighteſt Cauſe. This is obvious in the Tooth-ach, when the adamantine Cruſt of the Tooth, being corroded, and the minute Nerves diſpers'd thro' the internal Subſtance of the Tooth, deſtitute of their Coats, are, by the Action of the Air, ferz'd with intolerable Pain, which cannot be allay'd till the affected Nerve is deſtroy'd, by

an increas'd Diſtraction, the Application of proper Remedies, or the Drawing of the Tooth.

Hence it is obvious, that the greateſt Degree of Pain, in the ſame Part, is but ſhort; but a leſs Degree may continue long, and be increas'd, or remit.

Since Pain ſuppoſes ſuch a Condition of a Nerve as endangers its Rupture, that is, a Solution of its Continuity; and ſince the Pain is the more intenſe, the nearer the nervous Fibre is to a Rupture; it is obvious, that the greateſt Pain is then preſent, when the nervous Fibre is breaking; but when it is broken, all the Pain ceaſes, which before aroſe from the too great Diſtraction of this Fibre. The greateſt Pain, therefore, denoting that the nervous Fibre will ſoon break, will be ſhort; becauſe, when the Fibre is broken, it ceaſes. Thus, when a Wound is inflicted with a ſharp Razor, a ſhort and momentaneous Pain is only produc'd; and, in the Gout, the Violence of the Paroxyſm is obſerv'd to end the ſooner, the more intenſe the Pain is; when a Tooth becoming carious, the Nerves diſpers'd thro' its Subſtance are diveſted of their Coats, ſometimes, by Suction, ſuch Nerves are diſtracted, and ſuch an intenſe Pain is produc'd, that the moſt robuſt Man cannot bear it, even for a few Moments: But when the nervous Fibrils are broken, the Pain ſoon ceaſes. The Drawing of a Tooth is attended with great Pain, which immediately ceaſes, after the Operation is over: The higheſt Pain will therefore ſoon deſtroy the affected Nerve, or ſo affect the Brain, as that all Perception of Pain ceaſes: On which Occaſion, a Syncope, or an Abolition of all vital Motion, generally happens. Nor can the moſt racking Pains proceed any farther; for Perſons in ſuch a Condition, like a Carcaſe, feel no more. Thus it is certain, from many Experiments, that Malefactors, condemn'd to the Rack, become immediately, as it were, dead; and are no longer ſenſible of the moſt exquiſite Torments.

It ſeems to be repugnant with this Circumſtance, that violent Tooth-achs torment People for ſeveral Days, or even Weeks: But the Reaſon of this is, that the ſmall Nerve which enters the Tooth, and is divided into minute Fibrils, is diſtributed thro' all its Points: Hence tho', by the greateſt Pain, one ſuch Fibril is deſtroy'd, the Misfortune proceeding to the others may long protract the exceſſive Torments.

But as a milder Pain ſuppoſes a ſmaller Tenſion of the affected Nerve, and conſequently leſs Danger of a Rupture, it is ſufficiently obvious, that ſuch a Pain may be long protracted: And as between the natural Tenſion of a Nerve, and the greateſt Diſtraction, next to a Rupture, numberleſs intermediate Degrees may be conceiv'd, it appears, that ſuch Pains may continue long without the Deſtruction of the affected Nerve, and be increas'd or diminiſh'd according to the greater or leſs Degree of Diſtraction. But theſe Pains, which happen in Parts of the Body pretty near the Heart, and are accompanied with a violent Fever, ſoon ceaſe; the affected Part being deſtroy'd: But in Parts remote from the Heart, and free from a great Agitation of the Humours, long-continu'd, and often returning Pains, may happen, without a ſudden Deſtruction of the affected Parts. A violent and inflammatory Iliac Paſſion often takes off the ſtrongeſt Man, in a few Hours: But the Gout, by repeated Paroxyſms, often racks the Patient for twenty Years, before it deſtroys the affected Nerves; in which Caſe, the Pain in the Extremities is diminiſh'd, or ceaſes: But the Matter which before prey'd upon the Limbs, is convey'd to the internal Parts, and produces the moſt terrible Misfortunes.

The Cauſe, therefore, of Pain, is every thing capable of producing ſuch an Extenſion or Diſpoſition of a Nerve.

Under the general Name of the Cauſe of Pain is comprehended every thing which ſo diſtracts or diſpoſes a Nerve, before not affected with Pain, as that it is in Danger of a Rupture: Nor is it of any Importance, whether this is done by Preſſure, Diſtraction, or Corroſion; ſince the Effect will always be the ſame; that is, the Idea of Pain will be excited in the Mind. With reſpect to Intenſity, or Duration, there may be a Difference between the Pains excited by different Cauſes, but in other reſpects the Effect will be the ſame.

Hence it is obvious, that a great Variety of Cauſes may excite Pain in the healthieſt Body: But that the latent Cauſe of Pain may be regularly trac'd by the Phyſician, and, when known, remov'd, we ought to reduce the hitherto-known Cauſes of Pain to certain Claſſes; which is done in the next Aphoriſm.

To this, then, belong,

Firſt, The Force of natural Contraction ſuſtain'd by fewer Fibres, whilſt ſome are divided.

Secondly, Whatever, by over-filling a Veſſel form'd of a Contexture of nervous Fibres, diſtends it. To this belong an

Obſtruction, a *Plethora*, a redundant Cacochymy, and an Increaſe of the circulatory Motion.

Thirdly, Whatever diſtracts the nervous Fibres; as Luxations, Tumors, and external Force. And,

Fourthly, Whatever wounds, or corrodes.

1. This is already treated of, when, ſpeaking of the worſt Species of *Paronychia*, in which this happens, when the Tendon of the Flexors of the Finger being affected, an intenſe Pain is produc'd: For the Bone of the laſt Phalanx of the Finger often falls off, after the Patient has ſuffer'd the moſt racking Pain: But before the Bone can fall off, the Tendon affix'd to it muſt be ſeparated from it, which is not done all at once, but by a ſlow Diſtraction; for no Parts of the Body, ſo ſmall as the Fingers, have ſo ſtrong Muſcles affix'd to them: And, in this Diſorder, thoſe Muſcles being contracted, the Fingers always appear bended. When, therefore, the Tendon begins to be ſeparated from this ſmall Bone, the remaining Fibres ſuſtain the whole Force of the contracted Muſcle, and are, by a ſlow, but continual Laceration, torn from the Bone to which they adhere. Hence an *intenſe Pain* often ſo diſturbs the whole Brain, that an acute *Phrenitis*, Convulſions, and often Death, ſucceed. No Degree of Patience is able to ſupport thoſe Torments, by which the Parts are gradually torn from the live Bones. A ſingular Inſtance of this we have in the Conduct of *Philotas*, mention'd by *Quintus Curtius*, in *Lib. 6. Cap. 11.*

2. It is ſhewn, under the Article FIBRA, that the large Veſſels conſiſt of Membranes which contain Veſſels of all Kinds, even the leaſt in the Body, ſuch as the Nerves: Every thing, therefore, which diſtends the Sides of the large Veſſels, will, by a Parity of Reaſon, diſtract the Nerves diſpers'd thro' them: But from ſuch a Diſtraction, as is before obſerv'd, ariſes the Idea of Pain in the Mind. It may be doubted, whether all the Veſſels in the Body have in their Membranes perceiving Nerves; ſince, as we have already obſerv'd, many of the *Viſcera*, which are, from Anatomy, known to conſiſt of a Congeries of Veſſels, are, however, often gradually conſum'd and deſtroy'd, almoſt without Pain. Hence this will only be true ſo far as the Membranes, conſtituting the Veſſels, have Nerves ariſing from the Brain, and ſubſervient to Senſation, diſtributed thro' their Subſtance: But that this happens in many Veſſels, is obvious; becauſe no Point in the Surface of the Body can be wounded by the Point of the ſmalleſt Pin, without a Diſcharge of the contain'd Humours from the wounded Veſſels, and a Perception of Pain: The principal Cauſes which diſtend the Veſſels furniſh'd with nervous and perceiving Fibres, are theſe following:

Obſtruction: This always ſuppoſes a Blocking-up of the Canal thro' which the Fluids ought to be convey'd by the vital Motion: Hence it neceſſarily follows, that the Fluids convey'd to the obſtructed Place of the Veſſel, and not able to make their Way thro' it, muſt dilate, attenuate, and at laſt reſolve or open the Sides of the Veſſel, as is ſhewn under the Article OBSTRUCTIO. It is therefore obvious, that the nervous Fibres conſtituting the Sides of the obſtructed Veſſels, becoming highly tenſe, and at laſt breaking, may excite the Idea of Pain, which will have various Degrees of Intenſity, according to the different Degrees of Diſtraction. When, in a Pleuriſy, the Arteries, obſtructed by the ſtagnant Blood lodg'd in the intercoſtal Parts, are diſtended by the ſucceeding Blood, an intolerable Pain is produc'd, and is always the more intenſe, the greater the *Impetus* is with which the Blood acts on the obſtructed Parts. Hence, when this *Impetus* is leſſen'd by Veneſection, the Pain either ceaſes, or is diminiſh'd. Hence Obſtruction, properly ſpeaking, is not the Cauſe of Pain; but the ſucceeding Blood, by dilating the obſtructed Veſſel, excites the Pain.

As for a Plethora; it is ſhewn, under the Article PLETHORA, that a Redundance of laudable Blood not only diſtends the Veſſels, but may, alſo, produce a Rupture in them: Hence all the Degrees of Pain which can ariſe from a preternatural Tenſion, or a Rupture of the Veſſels, are excited by this Cauſe alone. This is ſufficiently evinc'd by violent Head-achs ariſing from Repletion alone, and which are happily cur'd by Veneſection. Women, alſo, before their exceſſive Plenitude is remov'd by the menſtrual Diſcharge, from this Cauſe perceive Pains in various Parts of their Bodies; which, however, are happily remov'd, when the redundant Blood is evacuated thro' the dilated Veſſels of the Uterus.

As for a redundant Cacochymy; every Degeneracy of the Humours from the Conditions requiſite for Health, is comprehended under this Name: Now too great a Diſtention of the Veſſels may be produc'd by a Congeſtion of other Humours, as well as by a Redundance of laudable Blood; Hence, alſo, Pain will be excited, in conſequence of the Diſtraction of thoſe nervous Fibres which conſtitute the Membranes of the Veſſels. Here we do not treat of that Acrimony which degenerating Fluids may acquire, and by which they may excite Pain, by corroding or irritating the Parts. When a ſtagnant aqueous *Collluvies*, con-

geſted

geſted in the *Membrana Adipoſa*, in an *Anaſarca* of the Legs, the Pain ariſes from this Cauſe alone.

As for an Increaſe of the Circulation; it is ſhewn, under the Article SANGUIS, that an Increaſe of the Circulation alone, by an Augmentation of the Heat, produces a greater Rarefaction of the Fluids: Hence follows a greater Diſtention of the Veſſels; and the thicker Parts of the Fluids, entering the dilated Veſſels, produce Obſtructions, Diſtractions, and Inflammations. But all theſe cannot happen without a Diſtraction and Dilaceration of the nervous Fibres diſpers'd thro' the Membranes of the Veſſels: Hence it is ſufficiently obvious, that Pain is excited by that means. In Fevers, by an increas'd Motion of the Blood alone, a Pain of the Head and Limbs may be produc'd, which again ceaſes when the Fever is diminiſh'd, or remov'd.

Every thing which forcibly diſtracts the Parts of the Body, diminiſhes their Coheſion, and may, conſequently, induce a Solution of Continuity, if this Diſtraction is continu'd, or augmented: But, according to the Definition of Pain, ſuch a Condition of a Nerve as threatens the Solution of its Continuity, excites the Idea of Pain in the Mind: A Diſtraction, therefore, of the Parts furniſh'd with nervous Fibres, by whatever Cauſe, will produce Pain. Hence when Bones, luxated from the Cavities which naturally contain'd them, diſtract the Ligaments ſecuring the Articulation, an intenſe Pain is produc'd, which, upon the Reduction of the Bone, immediately ceaſes, unleſs the Ligaments diſtracted by the Luxation, or the adjacent compreſs'd Parts, are already inflam'd: A ſufficient Proof, that the Pain, happening after a Luxation, ariſes only from this Diſtraction of the Ligaments. Hence *Hippocrates*, in *Tr. de Articulis*, *Text.* 29. tells us, that they who have the *Humerus* luxated and reduc'd without Pain, or any Inflammation of the adjacent Parts, and for that Reaſon are negligent, ought to take great care that the reduc'd Bone do not again ſlip out: For which Reaſon he orders Phyſicians to warn them of this; becauſe, in ſuch Caſes, the Luxation returns far more eaſily than if the Parts were inflam'd.

Hence it is obvious, that the Effect will be the ſame if a Tumor, form'd by whatever Cauſe, diſtracts the Parts: For in an inflammatory Gout, and ſome other Diſorders, ſuch as a *Spina Ventoſa*, or an *Exoſtoſis*, a Diſtraction of the Nerves diſpers'd thro' the Ligaments of the Joints produces exquiſite Pain. How great Pain may be excited by external diſtracting Force, is obvious, from the Method of racking Malefactors; in which, by the Application of Weights, or the Uſe of Pulleys, the Parts of the Body are diſtended.

Every Wound, as is obvious, from its Definition, is the Solution of Continuity in a ſoft Part; but when the wounding Inſtrument divides Parts before united, that Condition of a Nerve is produc'd by which its Diſſolution is threaten'd: Pain is therefore excited; but it is only momentary, if the Parts are divided by a quick Action of the Inſtrument; yet there is Pain at the Moment the Wound is inflicted: But the Pain which ariſes ſome time after the Wound is inflicted, depends on the Diſtraction of the Parts, in conſequence of the Receſſion of the Lips of the Wound from each other. Hence this Pain ſucceeds the Wound inflicted, but does not ariſe from the Wound as its immediate Cauſe, but from the Change induc'd on the Wound from the Contractility of the Parts: For a Nerve, next to Rupture, produces the Idea of Pain in the Mind; but when the Nerve is totally divided, the Pain ceaſes. Hence, when a Wound is making, Pain is produc'd; but when it is made, it ceaſes.

All Corroſives, apply'd to the Body, and render'd active by the Heat thereof (ſince, except Fire alone, they hardly act upon a Carcaſe) divide and deſtroy the Parts, by numberleſs minute Wounds. Hence, as is evident, a pretty intenſe and long-continu'd Pain is produc'd.

Hence the various Cauſes of Pain in a Wound are known.

If the things hitherto taken notice of are apply'd to a Wound, it appears, that a great Number and Variety of Cauſes, exciting Pain in a Wound, may happen: For the wounding Inſtrument, at the time the Wound is inflicting, is the Cauſe of Pain. The Parts of the wounding Inſtrument, left in the Wound, may produce Pain: The Lips of the Wound, receding from each other, half-divided Nerves, and large Nerves divided, retracted, and diſtracting the ſmall Ramifications above the Wound, may excite the moſt intenſe Pain. When the Lips of the Wound are afterwards inflam'd, render'd tumid, and retorted, and, at the ſame time, the Celerity of the Circulation is increas'd by a ſlight Fever, new Cauſes of Pain are preſent. When the Humours, diſcharg'd into the Cavity of the Wound, acquire an acrid Quality, they excite Pain, by corroding and irritating the Parts: The ſame Effect will, alſo, be produc'd, by the Application of acrid Subſtances, of whatever kind. When, by a Suppuration, the obſtructed Extremities of the Veſſels are gradually ſeparated from the live Parts, Pain is, in like manner, produc'd, but ceaſes when the Pus is form'd: All theſe Things are to be carefully diſtinguiſh'd, that, knowing the Cauſes of Pain in a Wound, we may apply proper Remedies.

Hence, alſo, we underſtand the Effects of a Wound; which are, Inquietude, Jactation, Watching, Fever, Heat, Thirſt, Dryneſs, Convulſions, and Gangrene.

When Pain is preſent in the Body, its Effects ſucceed, which are principally obſerv'd to be theſe following:

Inquietude and Jactation: When we perceive Ideas, there ariſes in the Mind a certain Change, which is either grateful, or diſagreeable, or, ſometimes, rather totally void both of Pleaſure and Pain: Thus, when a Perſon thinks that a Circle is divided into two equal Parts by its Diameter, the Idea affords neither Pleaſure nor Pain; but if the Hand, when cold, is put near a moderate Fire, all ſay that this is pleaſant; and if live Fire is apply'd to the Hand, all will affirm, that this is diſpleaſing. In what manner this happens, perhaps, cannot be explain'd, tho' every one finds ſuch Things in himſelf. But the Senſe of Pleaſure and Pain, which accompanies the perceiv'd Idea, produces ſome Effects in us which the ſtrongeſt Efforts of Reaſon cannot overcome, whatever arrogant Philoſophers have aſſerted to the contrary. For the Will endeavours by all means to retain the grateful Senſation preſent to the Mind, and to deſtroy the ungrateful one; and then ſucceed mechanical Motions not determin'd by the previouſly-conſcious Mind, but truly neceſſary and phyſical, by which we endeavour to remove or avoid that which excited the ungrateful Perception in the Mind. This is a certain Ingredient in the human Nature, of which it cannot divest itſelf. If a Philoſopher, involv'd in profound Meditations, receives a Prick of a Pin in his Finger, he will immediately draw back his Hand, tho' there is not in his Mind any Conſciouſneſs of that Motion excited: Hence the Senſe of Pain, like a faithful Guardian, adviſes us, as it were, to remove that which would deſtroy the Body. Thus we ſee that Men in Pain, by a various Poſition of the Parts of their Bodies, and often by a continual Agitation, endeavour to find ſuch a Situation as may remove, or at leaſt diminiſh the Senſe of Pain. Hence ariſes the Inquietude and Jactation in exceſſive Pains: But when, by the leaſt Motion, the Pain is increaſed, the Patients remain immoveable, as is obvious, in the moſt racking Gouts, and Rheumatiſms.

As for Watchings; when an healthy Perſon has all his Senſes lock'd up by a natural Sleep, he is rouz'd and awak'd by all thoſe Things, which ſtrongly affect the Organs of Senſation: Much more, therefore, will Sleep, when not preſent, be prevented by Pain, which ſo efficaciouſly affects the Brain. For this Reaſon, the antient Phyſicians, in lethargic Diſorders, pull'd the Hairs from the Noſtrils, laſh'd the Limbs with Nettles, and apply'd acrid Subſtances to the Parts of the Body; that, being rouz'd by the Senſe of Pain, the exceſſive Drowſineſs might be remov'd.

As for a Fever; this almoſt always ſucceeds exceſſive Pains, even in thoſe Diſeaſes which naturally have no Tendency to a Fever; ſuch as a Gout, and *Lues Venerea*: For when ſuch an intenſe Pain racks the Patient, ſome Degree of a Fever is generally preſent.

Hence *Hippocrates*, in many Paſſages, acknowledges Pain to be among the Cauſes of Fevers: For in *Prænot. Coac.* N° 75. he tells us, "That from violent Pains ariſe long-continu'd Fe-"vers." And in N° 31. *ibid.* and in *Lib.* 1. *Prorrhet.* he informs us, "That malignant Fevers ariſe from Pains of the *Hy-"pochondria.*" When the Articulation of the *Humerus* ſlips towards the poſterior Parts, he tells us, that it is intenſely painful, and excites the moſt violent Fevers. And in his *Tr. de Fracturis* he informs us, "That unleſs any luxated Articula-"tion is ſpeedily reduc'd, a Fever will, in the healthieſt Perſon, "be produc'd by the Pain."

Since, therefore, a Fever almoſt always ſucceeds an intenſe Pain, we may eaſily underſtand how Heat is the Effect of an increaſed Circulation by the Fever; and Dryneſs, the Effect of a Diſſipation of the Fluids by a briſker Circulation, may ariſe from Pain: But when Dryneſs and preternatural Heat are preſent in the Body, Thirſt always forces the Patient to alleviate theſe Symptoms by copious Drinking.

As for Convulſions; theſe principally happen in thoſe, the Whole of whoſe nervous Syſtems is highly delicate, and ſuſceptible of the ſmalleſt Impreſſions: Hence Infants are ſo often ſubject to Convulſions, on account of Gripes in the Inteſtines, ariſing from an Acid.

As for a Gangrene; this is ſuch an Affection of a ſoft Part, as, in conſequence of an Abolition of the vital Influx and Efflux of the Humours, tends to a Mortification. Hence, with reſpect to a Nerve in great Pain, a Gangrene is ſuch a State of that Nerve, by which it tends to a Mortification, ſince it will

ſoon be totally ruptured in conſequence of its violent Diſtraction. When a violent Pleuriſy, accompanied with intenſe Pain, is not ſuddenly relieved, or when Reſpiration is by the Violence of the Pain ſo hindered, that the Patient is in Danger of being ſuffocated, livid Spots appearing on the Part affected, denote a mortal Gangrene. In an inflammatory Iliac Paſſion, after the moſt intenſe Pains, a Gangrene in a few Hours ariſes, upon which the Pain ceaſes, but Death ſoon ſucceeds. In a malignant Paronychia, within a few Hours, the Part is often affected with ſo intolerable Pain, that the corrupted ſoft Parts are diſſolved into a gangrenous Gore, and the Bone of the affected Finger falls off mortified. But a Gangrene principally ſucceeds Pain, when an Inflammation and violent Fever are preſent at the ſame time; for then, by the increaſed Impetus of the Circulation, the Parts are quickly deſtroy'd.

In this Caſe the Difference of Anodynes is to be eſtimated and determined by the Diverſity of the Cauſes producing Pain.

There is only one proximate Cauſe of Pain, and that is ſuch a *Diſpoſition of a nervous Fibre ariſing from the Brain* as threatens its Diſſolution. Every thing, therefore, which removes ſuch a Diſpoſition of the nervous Fibre, will be a Remedy for the Pain: But becauſe ſuch a Condition of the Nerve may depend on a great many different Cauſes, hence a proportionable Variety of Anodynes is requiſite, ſince diſtinct Remedies muſt be applied for removing each particular Cauſe. Hence it is neceſſary, that the particular Cauſe of the Pain ſhould be known before we can determine what will weaken or remove this Cauſe. We have already enumerated the Cauſes of Pain, and reduced them to diſtinct Claſſes; and the following Aphoriſm propoſes the Remedies ſuited to theſe Cauſes.

The Cauſe of Pain is, therefore, taken away,
1. By relaxing the diſtended Fibre.
2. By reſolving whatever is concreted.
3. By diminiſhing the Motion of the Fluids, and leſſening the diſtending Matter.
4. By removing the unequal and violent Traction.
5. By correcting the preſent Acrimony.
6. By diſcuſſing it; and,
7. By removing that which diſſolves the Fibres.

1. Such a Diſtraction alone as is ready to produce a Rupture, excites Pain: Now if we can by any Art manage things in ſuch a manner as that the Fibre may be diſtracted without Danger of a Rupture, the Pain ceaſes, tho' the Cauſe diſtracting the nervous Fibre continues to act. If we attempt to break a Piece of dry and rigid Wood it breaks; but if it is macerated in Water, it may be bent. Thus a green ſallow Twig may be twiſted without breaking; but when dry, an Attempt to bend it, breaks it. Hence in Diſorders, accompanied with the moſt intenſe Pain, ſuch Remedies have in all Ages been uſed as relax'd the ſolid Parts of the Body. In the Iliac Paſſion, *Hippocrates* ordered the Body to be fomented and anointed with Oil. In a Pleuriſy he commanded the affected Side to be covered with the moſt ſoft and tepid Subſtances, injoining at the ſame time, the internal Uſe of things of a like Nature. *Galen*, as is already obſerved, on himſelf allay'd the moſt intenſe Pain, and prevented the Convulſions to be dreaded from it, by continually applying warm Oil to the Part affected. Whilſt a Phlegmon, by an inflammatory Tumor of the ſubjacent Membrana Adipoſa, diſtends the Skin, and by a Diſtraction of the cutaneous Fibres produces Pain, tho' ſuch a Tumor being entirely irreſolvable, tends to a Suppuration, and conſequently the diſtending Cauſe not only remains, but is rather increaſed, yet if Cataplaſms of the moſt emollient Subſtances are continually applied, the Pain will be mitigated, ſince the nervous Fibres are ſo relaxed, that they may be diſtracted, without Danger of a Rupture. A large Quantity of any ſoft expreſſed Oil taken internally, greatly alleviates iliac, colical, and nephritic Pains. The Steam of tepid Water affords great Relief to Parts affected with the greateſt Pain. When by the Puncture of a Nerve immenſe Pains are produced, ſkilful Surgeons continually foment the Parts affected, with the moſt emollient Subſtances. Hence they affirm, that emollient and relaxing Medicines are an univerſal Remedy againſt Pains, becauſe they remove the proximate Cauſe of Pain which is the Danger of Rupture in the nervous Fibre; whilſt other Remedies act only on the remote Cauſes of the Pain. And tho' we ſhould be ignorant of the particular Cauſe ſo diſpoſing the nervous Fibres as to produce a Senſe of Pain, yet theſe Medicines may always be uſed with Safety and Advantage; for they have this good Property, that they are ſufficient for removing many of the remote Cauſes of Pain, without augmenting thoſe which they cannot remove; for the Veſſels being relaxed, the diſtending ſtagnant Fluid paſſes more eaſily through them, and at the ſame time, all Acrimony is corrected by ſuch Medicines. But every thing which augments the Strength and Contractility of the Parts of the Body, whilſt the Cauſe diſtending the Fibres remains the ſame, will increaſe the Pain. Thus a Pleuriſy is obſerved to be far more violent in robuſt Perſons accuſtomed to Exerciſe, than in Patients of weak and lax Conſtitutions; in whom, alſo, luxated Bones are far more eaſily reduced than in Perſons of firm Habits; for in ſome, the Elongation of the Ligaments is ſo eaſy, that the Reduction may be made without Pain. When Executioners, in racking Malefactors, forcibly diſtract all the Parts of the Body, they greatly increaſe the Pain by ſprinkling cold Water upon them. When, therefore, the Efficacy of emollient and relaxing Subſtances can reach the Part affected, it will never fail to produce an Effect: If, for Inſtance, the nervous Fibril in the middle Subſtance of a Tooth is pain'd by too great a Tenſion, that Pain muſt neceſſarily be allay'd by relaxing Medicines. The ſame holds true, when from a Diſorder of the Marrow of a Bone intolerable Pains ariſe; as, alſo, when in a malignant Paronychia, the *Cauſe of the Diſorder is* lodged under the cartilaginous Part which covers the Tendons of the Flexor Muſcles of the Fingers. It may, alſo, ſometimes happen, that tho' the Pain is very intenſe, yet other Symptoms prohibit the Uſe of relaxing and emollient Medicines. Thus, for Inſtance, if from a latent or exulcerated Cancer, an intenſe Pain ſhould ariſe, Emollients would prove hurtful, becauſe they would greatly increaſe the Putrefaction, and fungous Excreſcence of the Cancer. But almoſt in all other Caſes, relaxing Medicines are univerſally uſed for alleviating Pains.

2. When a Stone impacted in the Ureters produces Pain, the Perſons who could diſſolve that calculous Concretion would remove the Pain. All thoſe things which are capable of reſolving Blood concreted by an inflammatory Denſity, will alleviate pleuritic Pains. The ſame holds true in all other Caſes, where an obſtructing Matter ſtuffing the Veſſels, or Tumors ariſing from a Concretion of congeſted Matter, preſs or diſtend the adjacent Parts. Under the Article OBSTRUCTIO, are conſidered the various Manners in which the Molecules of the human Fluids before ſeparate, may become concreted; and under that Article are, alſo, ſpecified the Remedies capable of dividing theſe Concretions. Hence the Nature of the Concretions ought to be inveſtigated from what has been ſaid, before we can find a Remedy, which, by reſolving that Concretion, will remove the Pain ariſing from it.

3. All Pain ſuppoſes a remaining Principle of Life; and if it ariſes from a ſtagnant Humour diſtending the obſtructed Veſſels, it will be the more intenſe the more briſk the Circulation of the Blood is. Hence in a Pleuriſy when a violent Fever is preſent, an intenſe Pain is produced, becauſe the Humours are impetuouſly forced on the obſtructed Part, and by dilating the Veſſels, forcibly diſtract the nervous Fibres conſtituting the Texture of theſe Veſſels. Every thing, therefore, which diminiſhes the Impetus and Velocity of the Circulation of the Humours, will alleviate the Pain, as is certain from daily Experience; for Veneſection till the Patient falls into a Deliquium, forthwith either removes, or at leaſt greatly abates, the moſt acute pleuritic Pains. Hence the antient Phyſicians in the moſt violent Pains, recommended Veneſection till a Deliquium was brought on. And *Galen*, in *Comment.* 1. in *Aphor.* tells us, that he removed a long and fixed Pain in that Part of himſelf where the Liver is joined to the Diaphragm, by opening the Artery between the Thumb and fore Finger of his Right Hand, and permitting the Blood to flow till it ſtopt ſpontaneouſly. For the ſame Reaſon, the Antients, as we find from *Cap.* 23. of the laſt quoted Work, recommended great Reſt in the moſt acute Diſeaſes, which are generally accompanied with an intenſe Pain of the Head. Nor in ſuch Caſes is Veneſection only uſeful, becauſe by weakening Life it diminiſhes the Motion of the Blood, but, alſo, becauſe by means thereof the Quantity of the diſtending Humours is leſſened. In plethoric Patients intenſe Head-achs are frequently preſent, tho' the exceſſive Motion of the Blood is checked, and almoſt ſuffocated by the Redundance of the Humours to be moved. But as ſoon as by a ſpontaneous Hæmorrhage from the Noſe, or a liberal Veneſection, the Redundance of the Blood is diminiſhed, the Pain forthwith ceaſes, becauſe the Matter which diſtends the too full Veins is removed.

But a Diminution of the Motion of the Blood is not only beneficial in thoſe Caſes, where an exceſſive Velocity of the Circulation, or too great a Diſtention of the Veſſels produce Pain, or augment it when produc'd by any other Cauſe; but it is, alſo, highly beneficial in alleviating thoſe Pains which ariſe from an acrimonious Quality of the Humours; for acrid Subſtances rendered active by the Circulation of the Blood and Heat of the Body, may produce bad Effects: But in a Carcaſe where there is no Motion,

Motion, except only the common Heat of the Atmoſphere, they produce ſcarcely any Effect. Thus *Helmont* and *Petit* inform us, that Cantharides applied to a Carcaſe, produce no Effect. And in *Mem. de l'Acad. Royale des Sciences l'An.* 1732. we are told, that a potential Cauſtic applied to the Skin of a Carcaſe produced little or no Effect in fifteen Hours; but when the Part to which it was applied was cheriſhed by warm Linen Cloths, it deſtroy'd the Skin, and a Part of the ſubjacent Fat. It is obſervable, that thoſe Diſeaſes in which the Pain ariſes from an Acrimony of the degenerating Humours, are always rendered worſe by an Increaſe of the Circulation, or an Augmentation of the Heat, which ſucceeds that of the Circulation. The nocturnal Pains, which ſo ſeverely afflict thoſe labouring under a *Lues Venerea*, are by the Heat of the Bed ſo increaſed, that the miſerable Patients are forced every Night to get out of Bed in order to cool their Bodies, and by that means alleviate their Pain. When an acute Fever ſeizes a Perſon labouring under a malignant Scurvy, the Pains are greatly increaſed, and ſometimes the Veſſels being ſuddenly burſt by the augmented Impetus of the acrid Humours, the Blood is diſcharged every-where. Thus, in *Mem. de l'Acad. Royale des Sciences l'An.* 1699. we have an Inſtance of a malignant Scurvy greatly increaſed by the Heat of the Air. The ſame is evinced by many other Obſervations.

In what Manner, and by what Means the Motion of the Fluids thro' the Veſſels may be diminiſhed, is ſhewn under the Article SANGUIS; but the diſtending Matter can only be removed by Evacuants.

4. When by a Luxation the Bone ſlips out of the Cavity of its Articulation, it diſtracts the Ligaments, and preſſes upon the adjacent Parts. Hence ariſes Pain, which ſoon ceaſes, or at leaſt is greatly diminiſhed, as ſoon as the Bone is replaced; for ſome Degree of Pain often remains after the Reduction, in conſequence of the Ligaments; for which Reaſon they are frequently inflamed. The ſame holds true, when the tendinous Parts half-torn, and continually elongated by an unequal Traction excite an intenſe Pain; for if, in that Caſe, by a proper Situation of the Part affected, and a due Application of Compreſs and Bandage, this unequal Traction is hindered, the Pain ceaſes. This is evinced by a memorable Caſe related in *Mem. de l'Acad. Royale des Sciences l'An.* 1728. But if the diſtracting Force cannot be removed, when, for Inſtance, the luxated Bone cannot be reduced on account of the Tumor, and violent Inflammation, then emollient and relaxing Subſtances are alone proper, ſince by their means the Fibres may be elongated without Danger of a Rupture.

5. When without a too great Motion of the Humours, any Signs of an exceſſive Diſtenſion of the Parts by a Concretion or Accumulation of the Fluids, or without any external diſtracting Force, a Pain ariſes, then we begin to think of the Acrimony of the Humours, which is often ſaid to produce that Pain which ariſes from other Cauſes. For a great Degree of Acrimony is very rarely found in the Blood, ſince the tender Veſſels of the Brain would ſoon be deſtroy'd if the acrid Humours paſſed through them. Hence acrid Humours are ſcarcely ever found, except in the *Primæ Viæ*, or when ſtagnant or extravalated Humours lodged in any Part of the Body become acrid, either from their own Nature, or a particular Cacochymy, as in a *Lues Venerea*, and Scurvy. Hence ſuch an Acrimony of the Humours in particular Parts is always bad. If it is, therefore, certain, that Acrimony is the Cauſe of the Pain, it is ſufficiently obvious, that the Pain is removed or mitigated by correcting that Acrimony. But this is done either by a ſpecific Medicine oppoſite to the known Acrimony; when, for Inſtance, an acrimonious Acid is enervated, and rendered mild by terreſtrial Abſorbents, or by alcaline Salts; or the ſame End is obtained by the general Remedies againſt Acrimony of all Kinds, ſuch as diluent, obtunding, and involving Subſtances, by which all Acrimony is ſubdued and corrected.

6. When in a malignant *Lues Venerea* the Bones are affected, intolerable Pains ariſe from a ſlow Corroſion and Tumor of the affected Bones diſtending the highly ſenſible Perioſtium: But when in ſuch Caſes the Body is filled with a large Quantity of the Decoction of Guaiacum, and a Sweat excited by kindled Spirit of Wine, that Decoction is convey'd thro' all the Veſſels, the latent Poiſon is deterged and carried out of the Body, and the Pain either greatly alleviated, or totally removed. The ſame will happen when there is a conſiderable Cacochymy of the acrid ſcorbutic Kind; for Inſtance, in the Body of a wounded Perſon: For in that Caſe, the Humours convey'd to the Wound, ſoon acquiring a greater Degree of Acrimony, may excite Pain. This acrid and irritating Matter is waſhed away and corrected by highly ſoft and gently diaphoretic Medicines, ſuch as all the vulnerary Decoctions exhibited in large Quantities.

7. So long as the Remains of the wounding Inſtrument, the Fragments of the wounded Bone, or any other Subſtances, which can by their acute Figure and Rigidity injure the Parts, remain in the Wound ſo long, the Pain will continue, eſpecially becauſe the Parts perpetually irritated become inflamed and tumid. Hence the Parts preſſed to this foreign Body left in the Wound are more lacerated, till it is extracted by chirurgical Inſtruments, or expelled by a due Suppuration. But in what Manner, and with what Cautions ſuch Bodies ſhould be removed from Wounds, has been already ſpecified.

The Senſe of Pain is taken away whilſt the Cauſe remains;

Firſt, by rendering the Nerves inſenſible by means of Compreſſion, Cutting, or Burning: And,

Secondly, By obtunding the common Senſory by the Force of Narcotics; and by theſe ſome of the Effects ariſing from the Senſe of Pain are taken away.

The *moſt perfect* Cure of Pain is the Removal of its Cauſe. But ſometimes the Cauſes even of the greateſt Pains are latent, and when they are known they cannot often be removed. But the ungrateful Senſe of Pain requires an Alleviation, ſince by its Effects ſuch as Reſtleſneſs, Watchings, and Fevers, the Body will be ſo changed that terrible Misfortunes may ſucceed. In this Caſe, the only remaining Method to be taken is to remove the Senſe of Pain, tho' its Cauſe remains. But the Senſe of Pain is produced when there is a free Commerce between the Brain and the affected Nerve, and when the Functions of the Brain remain entire: All things, therefore, which deſtroy the Senſe without removing the Cauſe of Pain, act either on the affected Nerve, or on the Brain itſelf.

1. It is certain from Experience, that when a Nerve which alone runs to any Part of the Body is deſtroyed, all Senſe of Pain in that Part is aboliſhed, as has already been obſerved; for the Change produced in the Extremity of the Nerve, ſo affecting the common Senſory, that an Idea of Pain ariſes in the Mind, is by the Soundneſs of the affected Nerve convey'd to the Brain. Every thing, therefore, which deſtroys the Soundneſs of the Nerve between the Brain and that Part of the Body to which the Cauſe exciting Pain is applied, will remove all Senſe of Pain, tho' the Cauſe of that Pain not only remains, but, alſo, continues to act with the greateſt Violence. They who in conſequence of a Luxation of the Spine of the Back, have the ſpinal Marrow compreſs'd, feel no Pain from the Application of live Fire to their Legs. Nor is it of any Importance, whether by a violent Compreſſion the Commerce is hindered between the Brain and the compreſſed Part of the Nerve, or whether by Cutting or Burning, the Continuity of the Nerve is deſtroy'd. When in the Amputation of Limbs the Veſſels are by a tight Ligature compreſſed, in order to ſtop the Hæmorrhage, there ariſes at the ſame time ſuch a Stupor and Inſenſibility of the Parts from a Compreſſion of the Nerves, as greatly diminiſhes the Pain of the Operation. A certain Empiric of *Amſterdam* cured the Tooth-ach by twiſting the Patient's Hairs about his Fingers, and then by a ſtrong Preſſure of his Thumb below the Lobe of the Ear, contuſing the Nerve lodged there, which diſtributes Ramifications to the ſuperior Jaw. The ſame Effect was produced by compreſſing the Nerve which on both Sides enters the inferior Jaw, under the firſt *Dens Molaris*. The moſt violent Tooth-ach is allayed by all thoſe things which deſtroy the pain'd Nerve in the Tooth. Hence, if by a Corroſion of the Tooth, free Acceſs may be had to the Nerve, they burn it with an Iron Probe red-hot, which affords preſent Relief, provided the Heat of the ignited Iron reaches the pain'd Nerve. This Method was commended by *Hippocrates*, who in *Tract. de Affectionibus*, tells us, "That in a Tooth-ach, if the Tooth is corroded and looſe, "it is to be drawn; but if it is neither corroded nor looſe, it "is to be burned." Others with a ſimilar Effect, put highly acrid diſtilled Oils, ſuch as thoſe of Cloves, and Origanum, into the hollow Tooth, which by their hot Quality immediately deſtroy the Nerve they touch. In many other Pains which obſtinately reſiſted the Efficacy of other Medicines, *Hippocrates* uſed live Fire, or Scarifications, by both which means he removed the Senſe of Pain, by deſtroying the Nerves. Thus, in *Tract. de Affectionibus*, after recommending many Remedies againſt Head-achs, he adds, "But if the Diſorder of the "Head is ſo violent and long-continued, that it cannot be re-"moved by purging the Head, the Patient's Head muſt either "be ſcarified, or the Veins in its Circumference muſt be "burned, ſince there is no Hope of Relief from any other Re-"medy." And in his *Tr. de Locis in Homine*, he tells us, "That in Head-achs we are to uſe Veneſection; but "if the Pain does not ceaſe, but continues for a conſiderable "time, we are to burn the Veins in the Head, by which "means

" means the Patient will recover." In ſeveral other Paſſages he gives the ſame Directions with reſpect to the Cure of an Head-ach. In *Tr. de Affectionibus*, in a violent iſchiadic Pain, he orders " the Part affected, where-ever it is, to " be ſoftened by Baths, Fomentations and Liniments, the " Body to be rendered ſoluble, and a Purge to be exhibited " after the Pain is alleviated; after which the Patient is to " drink Aſſes Milk. But if the Pain ſeizes one Part, fixes in " it, and cannot be removed by Medicines, it is to be burned " whatever Part it is." In *Tr. de Internis Affectionibus*, when treating of the ſame Diſorder, he tells us, that if after the Uſe of various Remedies, the Pain is not alleviated, the Part where-ever it is, is to have many deep Cruſts burned upon it, in the bony Parts by Fungi, but in the fleſhy Parts by ignited Iron. The ſame Directions are, alſo, given in *Aph.* 59. and 60. of *Sect.* 6. and in other Paſſages of his Works.

Hence, in *Aſia*, the *Moxa* is greatly uſed for removing arthritic Pains, and even the Gout; whilſt the Inhabitants take the old Leaves of a ſort of Mugwort triturated, and freed from all their hard and fibrous Parts; and having thus reduced them to a ſoft kind of Down, they make them up into pyramidal Bodies, the Baſe of which they apply to the Part affected. Then kindling the Apex or Top of the Pyramid, the Fire gradually deſcends and burns the Part; this is ſo mild a Cure, that *Kempferus*, in *Amœnitat. Exotic.* tells us, he has an hundred times ſeen Children ſubmit to it without ſhrieking, or teſtifying the leaſt Sign of Pain. Hence, in *Aſia*, the Uſe of the *Moxa* is ſo frequent, that every ſix Months, for the ſake of Health, many ſubmit to have ſome Parts of their Bodies burned by it; and even thoſe who are confined to perpetual Impriſonment, are permitted to come abroad, in order to enjoy that Advantage.

But becauſe in conſequence of the Deſtruction of the Nerve, all the Functions depending on its Soundneſs, are aboliſhed, ſo this Method of alleviating Pain is not uſed, except when the Pain is very intenſe, and the Medicines ſpecified above have been uſed in vain, or when the Condition of the Part affected is ſuch, that theſe Remedies cannot be ſo applied, as by their Efficacy to remove or correct the Cauſe of the Pain.

1. When the Cauſe of the Pain cannot be removed, or when it is of no Importance, or abſolutely impoſſible to deſtroy the pained Nerve, without injuring the Soundneſs of which it cannot without great Loſs or Danger be remov'd, then the only Method remaining is ſo to change the common Senſory, as to render it inſenſible of Pain; for that the Cauſe of the higheſt Pain may be in the Body, without any Senſe of Pain, even tho' the Soundneſs of the Nerves remains, is obvious from apoplectic Patients, and Perſons exceſſively drunk, who are entirely deprived of all Senſation. Now there are in Nature Medicines, which, for a certain time, remove the Senſe of Pain in the Mind, tho' they by no means take away or correct the Cauſes of that Pain. Theſe, from the Stupor they induce, are call'd *Narcotics*, which we have already treated of. The principal of theſe is Opium, which by a ſurpriſing Quality removes the Senſe of Pain, whilſt it remains in the Stomach; for a Grain ar two of Opium, when ſwallowed, by its reſinous Tenacity, which renders it difficult to be diſſolved, remains long in the Stomach, and generally for eight Hours at leaſt, allays the Senſe of Pain; and which is ſurpriſing, a Pill of undiſſolved Opium is frequently vomited up next Morning. Hence it does not ſeem to act, becauſe being diſſolved and mixed with the Humours, it is, by the Laws of the Circulation, convey'd to the Brain; but becauſe it remains applied to the internal Surface of the Stomach, and induces ſuch a Change on the Nerves diſperſed there, as is able to obtund the ſenſitive or perceiving Power of the Brain; for the great Influence of the Nerves diſperſed through the Fabric of the Stomach, on the common Senſory, is ſufficiently evinced from many Diſeaſes in which the Functions of the Brain are greatly diſturb'd, tho' the material Cauſe of all theſe Symptoms is only lodged in the Stomach. Corrupted Bile lodged in the Stomach, excites violent Head-achs, Vertigos, and Deliriums; but when that ſordid Matter is carried off by Vomits, all theſe Symptoms ceaſe. This is confirmed by many Poiſons, which even when they remain in the Stomach, induce ſurpriſing Changes on the Body; but as ſoon as they are removed from it, all the Symptoms produced by it ceaſe. This is confirmed by *Wepfer*, in *Cicut. Aquat. Hiſtor. & Noxæ*, where he gives us the Hiſtory of two Boys, and ſix Girls, who eat the *Cicuta Aquatica*.

It is, therefore, highly probable, that Opium lodged in the Stomach may, only by its touching the Nerves there, produce ſuch a Change in the common Senſory, as that tho' the Cauſe of Pain, and the Soundneſs of the Nerves remain, yet the Idea of Pain is not excited in the Mind. And Heaven, whoſe Deſigns are always pregnant with Compaſſion to the wretched State of Mortals, ſeems to have granted us theſe Remedies, in order to allay for a time theſe intolerable Pains, whoſe Cauſes cannot be removed, or at leaſt weaken'd, except in a long time. Hence *Sydenham*, being convinced by many Experiments, concluded, that without Opiates, Medicine would be very imperfect; and adds, that the moſt celebrated Preparations of Opium neither increaſed its Virtues, nor corrected that Malignity, of which many falſly ſuppoſed it to be poſſeſſed. Certainly the prudent Exhibition of due Doſes of Opium produces no bad Effects, even tho' continued for ſome Months. Hence the learned *Joannes Terentius Lyncæus*, in his Notes on *Hernand. Rerum Mexican. Novæ Hiſpan. Theſaur.* juſtly affirmed, that as all the Inhabitants of the Eaſtern and Southern Parts of the World every Day uſed Opium, Thorn-apples, and Bang, with Safety, it was to be lamented, that ſuch a Number of Mortals ſhould, through Ignorance of this Remedy, be cut off by violent and racking Pains, who might be preſerved, if induced by the univerſal Conſent of Phyſicians, they uſed it more frequently. And though *Proſper Alpinus*, in *Med. Lib.* 4. *Cap.* 1. condemns Opium as poiſonous, yet he is obliged to confeſs, that the *Egyptians*, who uſed it daily, perceived no Harm from it, though ſome of them gradually increaſing the Doſe, uſed three Drams of it each Day. But if ſuch as were long habituated to it ſuddenly gave over the Uſe of it, they were ſeized with Syncopes, and other violent Symptoms, till they again uſed it, or drank large Quantities of the moſt generous *Aretan* Wine with Aromatics.

It is not to be denied, that the imprudent Uſe of Opium exhibited in large Doſes, has produced Deliriums, Convulſions, and mortal Apoplexies. But many Medicines which are every Day ſafely exhibited in moderate Doſes, prove injurious when uſed to Exceſs. A memorable Inſtance of this with reſpect to Opium, is found in *Hiſt. de l'Acad. des Sciences l'Ann.* 1735. But though that ſurpriſing Caſe proves, that a large Quantity of Opium exhibited to one not accuſtomed to it, may produce numberleſs terrible Symptoms, and Death; and even that by its poiſonous Quality the Fluids of the human Body may be corrupted, yet it is certain from numberleſs Experiments, that it is a ſafe Medicine when prudently uſed; for in Diſeaſes it is a matter of great Importance to alleviate Pain; and nothing prevents the Removal of the known Cauſe of the Pain by other Remedies, whilſt by Narcotics the Senſe of Pain is obtunded. But it is carefully to be remembered, that though there is then no Senſe of Pain, yet the Cauſe of Pain continues to deſtroy the Body. For when in the moſt painful inflammatory Diſorders, ſuch as a Pleuriſy for Inſtance, the Pain is ſoothed by Narcotics, a violent Inflammation proceeding to deſtroy the affected Veſſels, produces a Gangrene, and the Patient awaking out of his Sleep often dies ſuddenly: Such fatal Events are then aſcribed to the Remedies, whereas they are only owing to this, that the Phyſician hearing no more of the Patient's Complaints, falſly imagines, that the Diſeaſe is become milder, though it continues with equal, and ſometimes, perhaps, with greater Violence, after the Exhibition of ſuch Medicines; for when by a Suppreſſion of all animal Motion a profound Sleep is induced, the vital Motions are augmented. But in inflammatory Diſorders there is too great a Velocity of the Circulation. Hence in theſe the Uſe of Narcotics ſeems never to be ſafe, unleſs by Veneſection, and other liberal Evacuations, the exceſſive Force of the Diſeaſe is previouſly broken. *Sydenham*, in *Febr. Contin. Ann.* 1661. carefully gives the ſame Caution, though from Experience he had learn'd the ſalutary Effects of Narcotics in many Diſeaſes, and uſed them boldly. In what Manner, and with what Cautions, Narcotics are be exhibited, has been already ſpecified. The Remedies adapted to this and the preceding Aphoriſm are before enumerated, when treating of the Means of procuring Sleep.

By theſe Remedies are removed all the Effects produced by the Senſe of Pain, ſuch as Reſtleſneſs, Jactation, and eſpecially Watching: But the other Effects depending on the Cauſe of Pain, ſo far as it endeavours to deſtroy the pain'd Nerves, continue, tho' the Senſe of Pain is ſoothed.

Convulsions consider'd as a Symptom of Wounds.

A Convulſion is a violent, unavoidable, and alternately repeated Contraction of a Muſcle.

Here we only treat of a Convulſion which ariſes from a Wound as its Cauſe; for a febrile Convulſion ariſes from quite different Cauſes, and conſequently requires a different Cure.

Every Convulſion is an Affection of a Muſcle; and when the Muſcles act, their Tendons are ſtretched; and ſince this is done alternately, the Tendons are at one time ſtretched, and at another relaxed. Hence, when Phyſicians, in feeling the Pulſe, perceive the Tendons, as it were, to leap, in conſequence of a Convulſion of the Muſcles of the Arm, they generally call that Symptom a *Subſultus* or *Leaping of the Tendons*. But as the Antients included the Tendons under the general

Name

Name of *Nerves*; for the Ligaments and Tendons were by them call'd νεῦρα, as well as the Nerves arising from the Brain and Spinal Marrow, as we find from *Galen, de Uſu Part. Lib.* 15. *Cap.* 1. Hence *Celſus* calls that Diſorder, which is at preſent commonly call'd *Convulſions*, a *Diſtenſion of the Nerves*.

In every Convulſion there is a Contraction of the Muſcle, which if it was voluntary, would not conſtitute a Diſorder. Hence it is added in the Definition, that it is an involuntary Contraction of a Muſcle. Beſides it is requiſite this Contraction ſhould be violent, otherwiſe there would be no Difference between a Convulſion and a Tremor, in which the Muſcles are, without the Concurrence of the Will, alternately relaxed and contracted; but theſe Contractions are only weak, whereas in a Convulſion they are violent. It is, alſo, added in the Definition, that this Contraction is alternately repeated, that is, ceaſes for a ſhort time, and then begins again.

But it is to be obſerved, that if the Cauſe, whatever it is, which produces the involuntary Contraction of the Muſcle, continues to act without an alternate Intermiſſion, then the Muſcle remains conſtantly contracted ſo long as the Action of that Cauſe continues. That this Diſorder is to be ranked among Convulſions, is ſufficiently obvious, becauſe the ſame occaſional Cauſes at one time produce the alternate involuntary Contractions of the Muſcles, and at another, their ſteady, though involuntary, Rigidity. This appears in epileptic Patients, in whom, during the Paroxyſm, the alternate Convulſions are at one time preſent, and a little after they become rigid like Statues, almoſt all the Muſcles of the Body being contracted, whilſt ſoon after they again fall into the alternate Convulſions. What the antient *Greek* Phyſicians call'd σπασμοὶ, is by the modern Phyſicians call'd Convulſions. A Tetanus was by them call'd, that Species of Diſorder in which the Muſcles, being involuntarily contracted, became rigid; which Diſtemper *Celſus*, in *Lib.* 2. *Cap.* 1. calls a *Rigor*; but gives the Name of *Diſtenſion of the Nerves*, to what they call'd *Spaſmus*; for the Name of *Convulſion* in this Senſe is only found among the modern Phyſicians; though in *Aretæus de Morb. Acut. Lib.* 1. *Cap.* 6. when treating of a Tetanus, and its Differences, the Word ξυνοχὴ occurs, which is properly enough tranſlated *Convulſio* in the Verſion. But the Author ſeem to have uſed *Tetanus* and *Spaſmus* promiſcuouſly for the ſame Diſorder, as is ſufficiently obvious from the ſame Chapter. And *Galen*, in *Comment. in Sect.* 4. *Aphor. No.* 57. tells us, "That a Tetanus is a Convulſion, though the Parts ſeem not "to be convulſed, becauſe they are equally drawn forwards and "backwards."

Hence we may conclude, that though at preſent the Word *Convulſion* is uſed, when an involuntary violent and alternately repeated Contraction of a Muſcle is preſent, yet under its more general Signification, we may, alſo, include that involuntary and violent Contraction of a Muſcle which remains without alternate Remiſſions, ſince theſe Words were formerly promiſcuouſly uſed, and ſince the Diſorders often ariſe from the ſame Cauſes, and ſeize the ſame Parts, that is, the Muſcles. That Species of Convulſion in which the Muſcles remain'd contracted, they divided into the *Tetanus*, in which the Patient was ſtrait, but ſo rigid, that he could not be bended in any Direction; the *Emproſthotonus*, in which the Body being bended forward, remain'd ſtiff and inflexible in that Poſition; and the *Opiſthotonus*, in which the Body was incurvated backwards in the like manner. Beſides, a *Tetanus* may be either univerſal, when all the Muſcles of the Body being thus affected become rigid in a Moment; or it may be partial, when, for Inſtance, by a ſpaſmodic Contraction of the Muſcles of the Jaw, the Mouth is obſtinately cloſed.

The Cauſe of Convulſions is, whatever drives the nervous Fluid with alternate Force into the convulſed Muſcles.

An human Creature has a ſurpriſing Faculty by which it can at Pleaſure, by means of the Muſcles ſubſervient to the Will, excite a Motion, ſuſtain and direct it, augment and diminiſh it, ſuppreſs it after it is excited, and again renew it after it is ſuppreſſed. And theſe ſo delicate Motions excited in the Body, and which by ſo great a mechanical Force change other Bodies, ſeem to be hardly corporeal with reſpect to their Principle, and are all performed without any Knowledge of the Cauſe, or Inſtruments requiſite to this Purpoſe; for the moſt ſkilful Anatomiſt can perform theſe Motions no better than the moſt ignorant and illiterate Child. But what is moſt ſurpriſing is, that in exciting theſe Motions, no phyſical Change appears in the Body, except in the thing changed; and when by the Influence of the Will ſuch an arbitrary Motion is ſuppreſſed, no Mark of the Will ſuch an arbitrary Motion is ſuppreſſed, no Mark of ſo great a Change remains. And all theſe things may be done in an almoſt imperceptible Portion of Time; for whilſt one wills to elevate his Arm, it is elevated. In order to this, as is obvious from Phyſiology, it is only requiſite, that there ſhould be a free Commerce between the Brain and Muſcles, by means of the Nerves convey'd from the medullary Subſtance of the Brain to the Muſcles ſubſervient to the Will. Since, therefore, a Convulſion from its Definition is ſuch an alternate Excitation of Motion, and a Suppreſſion of it when excited; and ſince we can at Pleaſure imitate ſuch a Convulſion, as Beggars feigning epileptic Fits do, it is obvious, that a Convulſion may be excited by every Cauſe, which without a Concurrence of the Will, by means of the Nerves, induces ſuch a Change on the Muſcles, as a ſound Perſon could bring about by the Act of Volition: And as we are ignorant of the Manner in which, by the Will, we excite Motion, but only obſerve the Effect, ſo we may be equally ignorant of that laſt Change in the common Senſory, by which a Convulſion is produced. All that Art can do is, to obſerve thoſe Changes of the Body which are ſucceeded by ſuch an involuntary Contraction of the Muſcles, and then to remove or correct theſe known Changes, though we by no means underſtand in what manner theſe Changes of the Body affect the common Senſory, or that Part of the Brain where the Mutability of Thought is produced by the Change of the Body, and the Mutability of the Body by the Change of Thought.

But becauſe it is certain from medicinal Obſervations, that many things capable of exciting Convulſions may happen to the Body, and as we only here treat of Convulſions as they ſucceed a Wound as their principal Cauſe, ſo we are to inquire what things there may be in a Wound itſelf, by which Convulſions have been obſerved to be excited: And theſe are enumerated in the following Aphoriſm.

And, therefore, the Cauſe of Convulſions may be inherent in the Wound itſelf, whether it be foreign Matter irritating the Parts, or the Condition of the wounded Nerve, or a previous exceſſive Evacuation of Blood.

As for a foreign Matter irritating the Wound; if that tender pulpous Production of the medullary Subſtance of the Brain, which conſtitutes the Subſtance of a *Nerve*, properly ſo called, and which in the larger Nerves is fortified by ſo many Coats, that it may be ſafely convey'd to the deſtin'd Parts, is irritated by an acrid Subſtance, or by any other Body, which by its mechanical Figure or Hardneſs, is capable of injuring or deſtroying that ſoft Pulp, Convulſions may be produced by that means. Now there may be lodged in the Wound, Nerves and Tendons divided, or ſo ſtript of their Coverings, that acrid Subſtances may be eaſily convey'd to the internal Part of that pulpous Subſtance which is ſo eaſily irritated: Thus it is certain, that when naked Nerves are only touched by Fluids to which they are not naturally accuſtomed, violent Pains and Convulſions are produced. When by the Caries of a Tooth, the hard Cruſt covering the ſmall Nerves diſperſed through its Subſtance is corroded, the cold Air acting on theſe naked Nerves, a Particle of Sugar, or the ſofteſt Butter touching them, throw the Patient into Convulſions, on account of the intenſe Pain. The touching of a Tendon diveſted of its Coats, in a Moment renders the Patient rigid, by producing an univerſal Tetanus, as is already obſerved; whereas Tendons covered with their mucous, or pinguedinous Coats, may be protracted, elongated, or ſewed together, without any great Pain. Since, therefore, in a Wound theſe highly ſenſible Parts are often rendered naked, a Part of the wounding Inſtrument, Fragments of the Bones, or other things of a like Nature left in the Wound, may, by irritating the Parts, produce the moſt violent Symptoms. The ſame will happen from the Humours diſcharged into the Cavity of the Wound, and acquiring an acrid Quality; as, alſo, from acrid Subſtances applied to the Wound.

As for the Condition of the wounded Nerve; it is already ſhewn, that Nerves and Tendons pricked, or half torn, produce Convulſions, and other violent Symptoms, which is evinced by many practical Obſervations.

As for a previous exceſſive Evacuation of Blood; when ſo great a Quantity of Humours is diſcharged from the Body, that the remaining Part, by the Force of the Heart convey'd thro' the Veſſels, is not able to fill them equably, the Preſſure on the Arteries of the Brain is wanting; hence the Motion of the Spirits through the Nerves of the Brain ceaſes; and hence ariſes a Palſy of all the Muſcles, and from a ſimilar State of the *Cerebellum* a *Deliquium*, ſo that all the nervous and arterial Fluids begin to ſtop. In the mean time the Parts being contracted by the greater Cold ſucceeding a Diminution of the Circulation, convey the venous Blood to the Heart, which, being fill'd, contracts itſelf, and with the greateſt Velocity moves the Blood through the empty Arteries, ſince nothing reſiſts it when thus impel'd. In this Caſe, therefore, the Blood is moved with a violent Impetus through the Veſſels of the Brain. Hence the Motion of the Spirits into the Muſcles becomes very quick, but ceaſes immediately, though it will return again when the Heart, which is gradually fill'd, contracts itſelf. In one Moment, then, the ſtrongeſt Cauſe of Motion is apply'd to the Muſcles, but next Moment ceaſes. Hence ariſes that alternate, violent, and involuntary Contraction of the Muſcles, which we call *Convulſions*.

This is evinced by what daily happens in the killing of Animals; for when by a Diviſion of the Carotid Arteries in Calves, Sheep, and Hogs, the Blood flows out with a full Stream, about the Death of the Animal the Flux of Blood begins to ceaſe, and only return at certain Intervals for the Reaſons now alleged; and then the Animal is always ſtrongly convulſed till it dies. When by Abortion, or after Labour, Women loſe large Quantities of Blood from the open Veſſels of the Uterus, they are often ſeized with Convulſions, and frequently die ſuddenly.

denly. The ſame is, alſo, to be obſerved, when by an exceſſive Purging, too great a Quantity of Humours is carried out of the Body. Hence *Hippocrates*, in *Aphor.* 3. *Sect.* 5. tells us, "That after the Loſs of much Blood, Convulſions, or "an Hiccup, are bad Signs." In *Aphor.* 39. *Sect.* 6. he tells us, "That Convulſions proceed both from Repletion and Inani"tion." Thus, alſo, in *Aphor.* 4. *Sect.* 5. he affirms, "That "Convulſions, and an Hiccup, ſucceed exceſſive Purging;" for Convulſions ariſing after exceſſive Evacuations denote, that there is ſo great an Evacuation of Fluids from the Body, that the empty Veſſels collapſe, and the Blood propel'd from the Heart, cannot propagate the Motion it has receiv'd, through the full Veſſels, but ruſhes freely into the empty Veſſels. Hence the due and equable Preſſure on the Veſſels of the Brain on which Life and Health depend, is wanting. Hence it is obvious, how great Danger accompanies Convulſions ariſing from exceſſive Inanition.

Hence, alſo, the Effect of a Convulſion, which is a Perturbation of all the Functions, is known.

The Effects of Convulſions are not only ſurpriſing, but almoſt numberleſs; for not only all the Solids and Fluids, but, alſo, the Actions depending upon them are diſturbed; for when by this alternate and violent Contraction the Muſcles are at one time rigid, and at another time flaccid, the Motion of the Blood through the Muſcles is at one time hindered, whilſt next Moment it freely paſſes through the flaccid Muſcles with the greateſt Impetus. The Veins adjacent to the convulſed Muſcles are quickly emptied, in conſequence of which, the Impetus of the venous Blood towards the Heart is accelerated. Hence the equable Reception of the Blood into the Heart, and its Expulſion from it, are greatly diſturbed. Reſpiration is, alſo, ſurpriſingly diſturbed, ſince it becomes laborious, and cannot be performed without the greateſt Uneaſineſs. Sometimes, alſo, a violent Suffocation happens, as *Aretæus de Cauſis & Signis Morb. Acut. Lib.* 1. *Cap.* 6. has obſerved, when deſcribing the Effects of a *Tetanus*. Nor is a leſs Diſturbance obſerved in the animal Actions; for thoſe enormous Motions of the Muſcles are not determined by the Will, but happen in an involuntary manner, and often without the Knowledge of the Patient. Often, alſo, all the external and internal Senſes are totally aboliſhed, or ſurpriſingly diſordered; nor is it to be wondered at, ſince the Convulſions teſtify, that the Brain, on which Life and Health depend, is affected. In the natural Actions ſurpriſing Changes are, alſo, often obſerved, ſince when the Jaw-bones are frequently ſo conſtricted and cloſed, that they cannot be ſeparated by a Wedge, Deglutition is impoſſible. Inflations of the Stomach and Inteſtines, often diſtend the Abdomen, ſo that it is ready to burſt. Sometimes neither the Fæces nor Urine are diſcharged, whilſt at other times, both are evacuated without the Knowledge of the Patient. In a word, every thing in the Body is ſo ſurpriſingly chang'd by Convulſions, that nothing of the former Health remains, and the miſerable Patients are hardly known by their intimate Acquaintances. All theſe Changes are accurately obſerved and deſcribed by *Aretæus*, who in the Paſſage laſt quoted, concluded, that it was lawful to wiſh for the Death of ſuch Patients, that their miſerable Lives, and exceſſive Torments, might end together.

For if ſuch Patients ſurvive, violent Symptoms often remain, ſuch as Diſtortions of the Limbs, Diſtractions of the Muſcles, and a Deſtruction of the Functions of the Brain. Thus it is certain from Experience, that Palſies, Atrophies, and Folly, have remained incurable, during Life, after violent Convulſions.

Sometimes, alſo, Convulſions are ſucceeded by an Abolition of all the vital, animal, and natural Functions, which is Death. *Hippocrates*, in *Aphor.* 2. *Sect.* 5. tells us, "That Convul"ſions accompanying a Wound, prove mortal." *Aretæus*, in the Paſſage laſt quoted, when treating of Convulſions, tells us, "That they generally happen on account of Wounds; when "for Inſtance, Membranes or Muſcles, or Nerves, are punc"tured, in which Caſe, the Patient generally dies; for Con"vulſions happening after a Wound are mortal."

Convulſions are cured, 1. By artificially removing whatever irritates the Parts. 2. By correcting or diſſipating the Acrimony. 3. By removing the morbid Condition of the Nerve by proper Remedies. 4. By Repletion with ſome mild, friendly, liquid Aliment, often taken in ſmall Quantities. And, 5. By ſtopping the Hæmorrhage.

Though Authors abound with antiſpaſmodic Remedies, yet every one muſt perceive, that as Convulſions ariſe from ſo different, and even often, oppoſite Cauſes, there can be no univerſal Remedy for them. But after inveſtigating the Cauſe, we muſt determine the Remedy capable of removing, or weakening this known Cauſe. But as Convulſions after Wounds ariſe, either from ſome irritating Matter lodged in the Wound, or from a Puncture or partial Diviſion of the Tendons, Membranes, and Nerves, or laſtly, from an exceſſive Loſs of Blood, ſo the whole Intention of Cure muſt be directed to theſe three Indications. Hence, in the firſt and ſecond Numbers following, we ſhall treat of thoſe means which remove or mitigate the irritating Matter. In the third, we ſhall conſider theſe Methods which remove the preternatural Condition of the affected Nerve or Tendon. And in the two laſt Numbers we ſhall ſpecify thoſe Remedies by which a Loſs of Blood may be ſtopt, and that Portion of it which is loſt, reſtored.

1. *As for a Removal of irritating Subſtances*; if a Thorn is fix'd in any nervous Part, under the Nail, for Inſtance, in ſuch a manner as to wound the nervous Papillæ, after an intenſe Pain Convulſions frequently ariſe, which cannot be eaſily removed ſo long as the Thorn is lodged there. Hence we are as much as is poſſible, in the firſt Dreſſing, to enquire, whether ſuch a Subſtance is lodged in the Wound. But how this is to be done, and with what Cautions ſuch Subſtances are to be removed, we have already ſpecified.

2. *As for correcting or diſſipating the Acrimony*; Acrimony rarely ariſes in a Wound from the Humours convey'd to it, unleſs there is a great Cacochymy in the Body before, or large Quantities of acrid Aliments have been eaten. This far more frequently happens from the imprudent Application of acrid Remedies, ſuch as Arſenic, or other corroſive Medicines to the wounded nervous or tendinous Parts. But theſe Applications when known, are to be removed or weakened by Medicines, which by an oppoſite Virtue are able to correct the known Acrimony. In this reſpect nothing univerſal can be determined, but a Remedy ſuited to each particular Acrimony is to be applied. The ſofteſt Balſams are, however, beneficial, becauſe they hinder the Parts from being corroded by the acrid Subſtances, and at the ſame time weaken them by ſheathing them up in their mild Fat as has been already obſerved. The Medicines belonging to this Number are found under the Article ACIDA, and ALCALI.

3. *As for a Removal of the Condition of the Nerves by proper Remedies*; the Cauſe of Convulſions ariſing from a Wound, is frequently ſuch an Injury done to a Nerve, as that being partially divided, its remaining entire Fibres are diſtracted. Hence ariſe exceſſive Pain, Convulſions, and the other Symptoms already enumerated. But all theſe ariſe from a ſlow and continual Diſtraction of the nervous Fibres, which is always accompanied with Pain, as is obvious from the Definition of it already given. Thoſe Remedies, therefore, which remove the Pain, will, alſo, cure the Convulſions ariſing from it. But theſe Remedies act either on the Cauſe of the Pain, or render the Nerve incapable of Senſation, by deſtroying the Commerce between it and the Brain; or laſtly, they ſo obtund the common Senſory, as that it cannot perceive that Change of the Nerve produced by the Cauſe exciting the Pain. But that all theſe things have been with Succeſs uſed for the Cure of Convulſions, will be obvious from what follows.

For among the things recommended above for removing Pain, the moſt conſiderable and univerſally uſeful, are relaxing and emollient Subſtances, by the Application of which the nervous Fibres may be ſo diſpoſed, as that they may be diſtended without Dread of a Rupture; and theſe have in all Ages been uſed for removing Convulſions: Thus for the Cure of a Tetanus, *Hippocrates*, in *Tr. de Morb.* recommends warm and fat Broths prepared of Fowls, together with tepid, moiſt and pinguious Fomentations, contained in Bladders and Bottles, and applied every-where, but eſpecially to the Parts affected. He, alſo, orders the Patient to be liberally and frequently anointed with warm Oil. And in his *Tr. de internis Affection.* for the Cure of a Tetanus ariſing from a Wound, he orders Unctions with pinguious Subſtances before a Fire, Fomentations, Steams of hot Liquors, Sweats excited by pouring warm Water on the Patient, and the drinking of tepid Milk and Water, if the Patient can; if not, he orders it to be pour'd into his Noſtrils. Beſides, in *Aphor.* 22. *Sect.* 5. when mentioning the Uſe of warm Subſtances, he ſays, that they alleviate Pain, Rigors, Convulſions, and a *Tetanus*. And on the other hand, in *Aphor.* 39. of the ſame Section, he affirms, that Cold produces Convulſions, and a *Tetanus*; for Heat relaxes all Bodies, ſo that they may be diſtracted and bended without Danger of breaking; whereas Cold contracts and renders every thing brittle, as is obvious from daily Experience. The ſame Meaſures are recommended by *Celſus*, in *Lib.* 4. *Cap.* 3. who orders Patients thus affected, to bathe in warm Oil, or warm Water in which Fenugreek has been boiled, with an Addition of a third Part of Oil. *Galen*, when afflicted with a violent Diſtraction of the Ligaments, freed himſelf from approaching Convulſions by continually anointing with warm Oil, and perceived the Convulſions juſt coming upon him, as ſoon as the Uſe of the Oil was intermitted. *Aretæus, de Cur. at. Morb. Acut. Lib.* 1. *Cap.* 6. orders the like Meaſures to be taken for the Cure of a *Tetanus*. Hence it is obvious, that the antient Phyſicians unanimouſly recommended the moſt emollient Remedies which ſo effectually allay Pain, for the Cure of Convulſions.

It is, alſo, ſufficiently obvious, that if a Nerve, the Wound of which diſturbs the common Senſory, can, without the Danger of a greater Evil, be deſtroy'd by Compreſſion, Diviſion, or Cauſtics, there is no longer any Dread of Convulſions, becauſe the Commerce between the Brain and the affected Nerve, is removed. This is evinced by practical Obſervations in the Cure

of

of a certain Species of Epilepſy, in which there is felt, in a particular Part of the Body, the great Toe, for Inſtance (a Caſe of which Kind, ſays *Van Sweiten*, I myſelf have ſeen) a certain Titillation, as if Ants crept through the Part (See ALBADARA). And this titillary Motion aſcends through the Leg, Thigh, and Abdomen, to the Præcordia, upon which the Patient falls down convulſed all over his Body. If, when he firſt perceives the Diſorder beginning in his great Toe, he ſpeedily applies a tight Ligature below the Knee, he is freed from the Paroxyſm. In ſimilar Caſes it is often beneficial to burn deep, by means of a Cauſtic, into the Part where this ſurpriſing Motion firſt begins, in order to deſtroy the ſmall Nerve, the Diſorder of which is capable of diſturbing the whole Body in ſo ſurpriſing a manner. Something like this is found in *Celſus*, *Lib.* 5. *Cap.* 26. where he tells us, "That a Muſcle when wounded, is to be divided, "becauſe when wounded it proves mortal; but when it is di-"vided, the Diſorder of the Part may be cured."

But thoſe things, which by their narcotic Quality ſo obtund the common Senſory, as to remove the Senſe of Pain, are often ſurpriſingly efficacious in checking theſe convulſive Motions, as is often obſerved, eſpecially in hyſteric Convulſions; though among the Antients we do not find, that theſe Remedies were frequently uſed in ſuch Caſes. But *Hippocrates*, in *Lib. de intern. Affection.* for the Cure of a *Tetanus*, among other Remedies, orders the Head and Body to be anointed with a warm Infuſion prepared of the Seeds of Henbane and Wine, with the Addition of an equal Quantity of Oil.

4. *As for a Repletion with ſome mild, friendly, liquid Aliment*; *Hippocrates*, in *Aphor.* 22. *Sect.* 2. in the Cure of Diſeaſes, lays it down as a general Rule, "That the Diſeaſes "ariſing from Plenitude, are cured by Evacuation, and thoſe "proceeding from Inanition, by Repletion." When, therefore, in conſequence of a Diviſion of the Blood-veſſels, there is a great Loſs of Blood, ſo that the equable Preſſure on the Veſſels of the Brain is by that means diſturbed, the Convulſions ariſing thence, have an exceſſive Inanition for their Cauſe, ſo that they will be cured by Repletion. The moſt celebrated Antiſpaſmodics, ſuch as Spirit of Hartſhorn, and of Raw Silk, the Tincture and Oil of Amber, of Caſtor, and the fineſt diſtil'd aromatic Oils, which in other Caſes are ſo efficacious in checking the inordinate Motion of the nervous Syſtem, are in this Caſe prejudicial by their Stimulus, by which, augmenting the Motion of the Blood, they expel that ſmall Quantity of it which remains in the Body through the divided Veſſels till the Patient dies. The whole Cure conſiſts in diſtending with a new and laudable Liquid the Veſſels collapſed, in conſequence of too great an Inanition. But here there is a conſiderable Difficulty; for the Aliments by the concurring Action of the Viſcera and Veſſels, and by their Mixture with a large Quantity of laudable Humours pre-exiſting in the Body, are aſſimilated to our Natures, and acquire the Properties requiſite in human Fluids, as is ſhewn under the Article FIBRA: But after a great Loſs of Blood, this Quantity of laudable Humours is wanting, which in a State of Health abſorbs that ſmall Quantity of crude Juice convey'd through the Thoracic Duct into the Subclavian Vein. By the ſame Cauſe, alſo, the Action of all the Viſcera and Veſſels is weakened. Hence the two moſt efficacious Cauſes which change crude into concocted Juices are wanting, or at leaſt, very languid. All, therefore, that can be done with Succeſs, is to exhibit ſuch Liquids as are moſt ſimilar to the Humours in a ſound State, ſuch as contain nothing of a ſtimulating Acrimony, but may be eaſily borne by a weak Body, and ſubdued by the remaining languid Action of the Viſcera and Veſſels. All thoſe things will, therefore, be beneficial which contain a Nouriſhment almoſt like that prepared in a ſound and robuſt Body, but eſpecially Broths prepared with Fleſh, and in which the Juices before elaborated in the Body of the Animal are diſſolved by the boiling Water. And ſuch Broths are ſtill better with the Addition of a ſmall Quantity of Citron-juice, which hinders their eaſy Degeneracy to Putrefaction. For the ſame Reaſon a little Sorrel may be boiled in them, with the Addition of Rice, Barley, Oats, and other ſoft Grains. All theſe are to be exhibited frequently, but in ſmall Quantities, leſt the weak Body ſhould be overpowered, and that there may gradually be ſuch a Repletion as may ſuſtain Life, and at the ſame time keep it ſo low, that the wounded Veſſels may be conſolidated, without any Dread, leſt by a ſudden Repletion of the Veſſels, or an increaſed Circulation, thoſe Parts ſhould be again lacerated, which had begun to be united; for unleſs it was confirmed by unexceptionable Facts, it could hardly be believed, how ſmall a Quantity of Blood is ſufficient for the Support of Life. The Propriety of this Method is evinced by its happy Succeſs in Women, who, by Abortions, have loſt ſo much Blood as to be ſeized with Convulſions, and given over for irrecoverable. A memorable Inſtance of the ſurpriſing Efficacy of Broth, after a great Loſs of Blood, may be ſeen in *Lower de Corde*.

5. *As for ſtopping the Hæmorrhage*; We have already explained, how an Hæmorrhage from a Wound may be ſtopt and ſhewn, that many Hæmorrhages may be ſtopt by different Applications and Operations. But when the Hand has no Acceſs to the wounded Veſſels, as, for Inſtance, when the Veſſels of the internal Parts of the Body are wounded, then tight Ligatures applied to the Arms and Thighs, are highly beneficial, that thus the Veins being compreſſed, the eaſy Return of the Blood to the Heart from theſe Parts may be prevented. By this means the Hæmorrhage is, at leaſt for a time, ſtopt, and, perhaps, an Opportunity given to the wounded Veſſels to contract themſelves, and be conſolidated. But after the Hæmorrhage is ſtopt, theſe Ligatures are not to be removed all at once, but gradually ſlackened, leſt the Hæmorrhage ſhould return. If the Patient enjoys great Eaſe both of Body and Mind, if Life is kept as low as poſſible, and the Patient not ſupported by Cordials, there is ſtill ſome Hope of a Cure even in the moſt dangerous Caſes.

A ſmall Tumor, and Inflammation in a Wound, are good; but they prove hurtful if too much increaſed. Baths, and Fomentations, together with anodyne and antiſpaſmodic Subſtances, applied to the wounded Parts, and to the Whole of the Patient, are beneficial; for which ſee INFLAMMATIO.

It is already obſerved, that on the ſecond or third Day there appears in the Lips and Bottom of a conſiderable Wound, a greater Heat, Pain, Redneſs, and Tumor, and that all theſe Symptoms continually happen to a Wound inflicted even in the ſoundeſt Body. Such a ſlight Inflammation, therefore, which is almoſt always accompanied with a gentle Fever, is never bad; for the divided Extremities of the Veſſels being contracted, reſiſt the impel'd Fluids. Hence ariſes an Obſtruction; and by the Force of Nature, accompany'd with a ſlight Fever, acting with a greater Impetus on the obſtructed Extremities of the Veſſels, a gentle Inflammation is produced, which is ſucceeded by a benign Suppuration ſeparating the Extremities of the obſtructed Veſſels, together with their ſtagnant Fluids, and reſtoring a free Circulation of the Humours through the whole Surface of the Wound; by which means a Regeneration of the loſt Subſtance, and an Union of the divided Parts are brought about. The ſame Obſervation is made by *Hippocrates*, who pronounces it a bad Sign when Tumors do not appear in large Wounds. In another Part he commends lax Tumors in a Wound, but condemns ſuch as are crude, as being Signs of a greater Inflammation. *Celſus*, in *Lib.* 5. *Cap.* 26. beautifully expreſſes this in the following manner: "When a Wound "ſwells too much, it is dangerous; but if it ſwells not at "all, is ſtill more dangerous. The former is a Sign of "a violent Inflammation, and the latter of a Mortification; "nor is a Fever terrible in a large Wound, when it laſts only "whilſt the Inflammation is preſent. But that Fever is dan-"gerous which either ſucceeds a ſlight Wound, laſts beyond the "time of the Inflammation, or brings on a Delirium." But when by a great Obſtruction about the Wound, or an Increaſe of the Circulation by means of a Fever, the Pain, Tumor, Redneſs, and Heat, are greatly increaſed, we know from the Obſtruction of the Phenomena common to all Wounds, that there is a greater Inflammation than is requiſite. If, therefore, this Inflammation ſhould proceed, it would deſtroy the Part by a gangrenous Corruption; or at leaſt, a far ſtronger Suppuration would enſue, ſeparating the irreſolvable inflamed Parts from the other live Parts, which cannot happen without a great Loſs of the Subſtance of the Body, eſpecially of the *Membrana Cellulosa*, which ſeems to be the principal Seat of a Suppuration. Hence a ſlow Conſolidation of the Wound, an unſeemly Cicatrix, and all the Misfortunes ariſing from too great a Conſumption of the Parts by a ſtrong Suppuration, may enſue. It is, therefore, requiſite the too violent Inflammation ſhould be removed by proper Remedies, which is done by relaxing the Veſſels, and reſolving the Fluids, which by their inflammatory Tenacity, had become ſtagnant. Hence Baths, and Fomentations prepared of the moſt emollient Herbs are of great Uſe. It is, alſo, carefully to be obſerved, whether the Cauſe of the Inflammation is lodged in the Wound itſelf, or whether it is owing to the Violence of the Fever, or the inflammatory State of the Blood. In the former Caſe, Topics are often ſufficient, but in the latter, an univerſal Remedy, checking the increaſed Circulation, or reſolving the inflammatory Spiſſitude, is requiſite. With reſpect to ſuch Medicines ſee OBSTRUCTIO, and INFLAMMATIO.

Antiſpaſmodics are, 1. Laxatives. 2. Diluents. 3. Reſolvents. 4. Abſorbents, ſuch as Crabs-eyes, Pearls, Ivory, Hartſhorn, Goat's-blood, Boar's-tooth, and Elk's-hoof. See ACIDA. And, 5. Opiates, which are already conſidered.

Extravaſated Blood fallen into any Cavity of the Body, ſhould be immediately brought away by a proper Situation of the Body; by Suction with a Pipe, if recent, otherwiſe after proper Dilution, by dilating the Aperture of the Wound, or by making a freſh Inciſion.

Beſides thoſe Parts of the Body in which the Humours ſecreted from the Blood are accumulated for their proper Uſe, or being collected, are eliminated from the Body, there are hardly found any Cavities in the Body: Thus the Cranium, Thorax, and Abdomen, are full; for when Wounds are made into the Cavities, their Contents burſt out as ſoon they can find a Paſſage. But the Blood ſo ſeen from the

vided Veſſels may ſo compreſs the Parts contained in theſe Cavities of the Body, as to poſſeſs the Place naturally occupied by the Viſcera lodged in them. Blood, therefore, extravaſated into theſe Cavities, by its Preſſure, injures the Action of the Viſcera contained in them, and afterwards becoming corrupted, it may, by its Acrimony, corrode and corrupt every thing it touches. Whilſt it is, alſo, attenuated and render'd putrid, being reſorbed by the bibulous Veins every-where open, both in the external and internal Parts of the Body, it infects the whole Maſs of blood with a putrid Taint, and produces the moſt terrible Diſorders. *Hippocrates*, in *Aphor.* 20. *Sect.* 6. tells us, "That if Blood is preternaturally diſcharged into the Abdomen, "it naturally corrupts and ſuppurates." And *Galen*, in his Comment on this Aphoriſm, by the Word κοιλίην, underſtood any preternatural Cavity, and tells us, that by the Word *Suppuration*, any Degeneracy of the Blood is here meant. But by the Word εκπυοῦσθαι, is probably meant, not a *Suppuration*, properly ſo called, but only that the Blood extravaſated, and contained in a preternatural Cavity, after a Suppuration makes a Way for itſelf through the Parts, tho' the extravaſated Blood is not converted into *Pus*, properly ſo call'd.

Beſides theſe large Cavities of the Body, there is under the Skin, and every-where in the Interſtines of the Muſcles, the cellular or pinguedinous Coat, which being eaſily dilated, yields to the extravaſated Blood, and may be diſtended often to an inordinate Bulk, as is obvious in ſpurious Aneuryſms, and Sugillations, after violent Contuſions. The Blood lodged in theſe preternatural Cavities may, in like manner, by its Preſſure and Corruption, produce many Misfortunes; for which Reaſon it ought to be ſoon removed, if it can be commodiouſly done. But it is to be obſerved, that extravaſated Blood may for a long time remain incorrupted, provided the Air has not free Acceſs to it; and that ſometimes by the Application of diluting and reſolvent Medicines, it may be ſo attenuated as to be reſorbed by the bibulous Veſſels, and gradually diſappear. See CONTUSIO.

But when Blood is extravaſated into any Cavity of the Body, and proves injurious by compreſſing the Parts; or if its Corruption is dreaded, and no Hopes of its Diſſipation remain, it is then to be evacuated by Art: And this is done

By the Situation of the Body: Which ought to be ſuch, that the extravaſated Blood may, by its proper Gravity, be diſcharg'd from the Orifice of the Wound. In order to this, it is of great Importance to know the Poſture of the Patient when he received the Wound; and he is then to be placed as nearly as poſſible in the ſame Poſture, otherwiſe the *Membrana Adipoſa* often ſo cloſes up the Wound of the Skin, that no Blood can be evacuated. Then let the Orifice of the Wound be put in a declining Situation, that the Blood may have a free Paſſage. Thus, for Inſtance, if there is extravaſated Blood in the Cavity of the Abdomen, it will be expedient to lie flat on the Belly. *Paré* evacuated Blood lodged in the Cavity of the Breaſt, and ſaved the Patient by ordering him to lie with his Feet elevated, and his Head low.

As for Suction with a Pipe; this is uſeful when Blood is extravaſated into the Cavity of the Abdomen, and eſpecially that of the Breaſt. In which Caſes they take a flexible Pipe of Lead, Leather, or Whalebone, with an obtuſe Point, leſt it ſhould injure the Parts. By means of this introduced into the Cavity of the Body, the extravaſated Blood may be evacuated either by Suction, or the Application of a Syringe. But when the Blood is collected under the Skin in the Cells of the *Membrana Adipoſa*, it is ſufficiently obvious, that this Method is of no Uſe.

But unleſs the extravaſated Blood is ſufficiently fluid, it can neither be evacuated by Suction, nor the Situation of the Body. If, therefore, the Blood is formed into grumous Concretions, it is to be ſo diluted as that it may eaſily paſs through the Orifice of the Wound, or the Aperture of the Pipe. In this Caſe we take Water, with an Addition of a proper Quantity of Honey, or *Venice* Soap, and a little Sea Salt and Wine. This Liquor is to be injected tepid, and ſhaken gently, or agitated by the Motion of Reſpiration with the concreted Blood, which it dilutes and diſſolves. Then by the Situation of the Body, or Suction, the injected Liquor is to be evacuated, and this is to be repeated till the injected Liquor returns pure, and not tinged with any bloody Colour. Thus *Paré*, by a ſimple Decoction of Barley with Honey, brought out the Blood lodged in the Cavity of the Breaſt; and when next Day he injected an Infuſion of Centaury, Wormwood, and Aloes, in order to cleanſe the Parts the better, he found the Patient complain of a certain ungrateful Bitterneſs and Nauſea. But it is ſufficiently obvious, that theſe Meaſures cannot be taken ſo long as there is any Danger of an Hæmorrhage.

The extravaſated Blood, when coagulated, is diluted by theſe or other Preparations of a like Nature.

Take of common Honey, two Ounces; of *Venice* Soap, two Drams; of Sea Salt, four Drams; and of Rain-water, twelve Ounces: Mix all together. Or,

Take of Sal Ammoniac, and Nitre, each three Drams; of the recent Urine of a found Perſon, twelve Ounces; and of common Honey, two Ounces: Mix all together. Or,

Take of Aloes diſſolved in Water, duly cleanſed from its reſinous Fæces, and again gently inſpiſſated, four Drams; of Sal Ammoniac, two Drams; of Borax, two Drams; of pure Honey, two Ounces; of Rain-water, nine Ounces; and of *French* White Wine, two Ounces: Mix all together.

The prudent Injection of theſe Preparations when tepid, and a gentle Conquaſſation of them with the ſtagnant Blood, dilutes it, reſolves it, preſerves it from Putrefaction, and prepares it for an Evacuation. Hence ſuch Preparations are much uſed, when extravaſated Blood becomes ſtagnant or coagulated in the large Cavities of the Body.

As for a Dilatation of the Aperture of the Wound, or a freſh Inciſion; if the Wound is too narrow, or if the *Membrana Adipoſa* forced into its Aperture obſtructs its Orifice, then Dilatation becomes requiſite. It ſometimes, alſo, happens, that the Aperture of the Wound is pretty high, and the extravaſated Blood ſituated in a Place ſo far below it, that it cannot be evacuated through the Orifice of the Wound, unleſs the Poſture of the Body is inverted, which the Patient cannot bear without great Uneaſineſs. Thus, when in a Wound of the ſuperior Part of the Thorax, a large Quantity of Blood is from the divided Veſſels diſcharged into the Cavity of the Thorax, that Blood lodg'd towards the poſterior Part of the Thorax, where the Diaphragm deſcending deep, much enlarges its Capacity, will remain, nor can it eaſily be evacuated through the Wound, unleſs the Patient was to ſtand on his Head. Hence that Blood is rather to be evacuated by making a new Aperture towards the poſterior and inferior Part of the Thorax on the affected Side. The ſame holds true, when by a Wound inflicted about the Loins, Blood is lodged in the Cavity of the Abdomen, and this Blood by its Gravity falls to the anterior and inferior Part of the prominent Abdomen. Hence it will be far more eaſy, by the *Paracenteſis* perform'd in this Place, to evacuate the Blood, than, by a Compreſſion of the Abdomen, and a Change of Poſture in the Body, to eliminate it thro' the Aperture of the Wound: It is, in like manner, requiſite, there ſhould be a new Aperture of the Wound, when Blood, extravaſated in the *Membrana Adipoſa*, deſcends into a lower Part.

If the Wound deſcends among the firm Parts of the Body, way muſt be made for the *Sordes*, by Preſſure, Lotion, Ligature, and a freſh Aperture, or Dilatation of the Wound.

It ſometimes happens that the Inſtrument, when forcibly applied, deſcends pretty deep into the Parts, eſpecially into the *Membrana Adipoſa*; then the Liquids, diſcharged from the divided Veſſels into the Cavity of the Wound, and the Pus collected, will remain there, and, by their proper Gravity, deſcending into the eaſily-dilated *Membrana Adipoſa*, will augment the Depth of the Wound; nor can they eaſily be diſcharged from the Orifice of the Wound, which is ſituated higher. The collected Matter, alſo, often makes ſurpriſing and ſinuous Ways for itſelf thro' the *Membrana Adipoſa*, between the Muſcles; from which Circumſtance there afterwards ariſes a great Difficulty in the Cure: This is beſt diſcovered, if, by a Syringe, tepid Water is gently injected into the Orifice of the Wound; for the greater or leſſer Quantity of the Water injected will determine the Deepneſs of the Wound, and the Largeneſs of the concealed Cavity: For when the Deepneſs of a Wound is examined by the Probe, whilſt this Operation is rudely performed, the Probe, paſſing thro' the *Membrana Adipoſa*, will form a new Cavity: Hence the Cure will afterwards be more difficult. A memorable Inſtance of this is found in *Hildanus*, *Obſervat. Chirurg. Cent.* 4. *Obſ.* 84. So that it is far ſafer to inject Water, provided it is gently done; for if it ſhould be injected with Violence, the Water might lacerate the *Membrana Adipoſa*, and form ſurpriſing *Sinuſes*.

As for Preſſure and Ligature; when, by an Injection of tepid Water, or the prudent Introduction of the Probe, we know how far the Wound penetrates, we then apply to that Place a Compreſs, which is to be ſecured by a Bandage; by which means the collected Humours are hindered from deſcending farther into the Cavity of the Wound; then, at each Dreſſing, the Situation of the Compreſs is to be gradually changed, ſo as to proceed more and more towards the Aperture of the Wound; thus aſcending ſlowly from the inferior Parts: The Orifice of the Wound is, in the mean time, to be kept open, that the Contents of its Cavity may be diſcharged; hence the Bandage is to be ſo ordered, as only to compreſs the lower Part of the Wound, but leave its Orifice entirely open, which, for the ſame Reaſon, is never to be cloſed by a Tent.

As for Lotion; when the extravaſated Humours become ſtagnant in the Cavity of the Wound, and remain long there, as they cannot be eaſily evacuated, on account of the ſuperior Situation of the Orifice of the Wound, they are corrupted by their Continuance and the Heat of the Place, and may, therefore, acquire a very malignant Degree of Acrimony. The moſt laudable *Pus*, when long retained in a Wound, becomes ichorous, thin, and acrid: By this means, the whole Surface of the Wound will be ſo affected, as to become fordid; but ſo long as the Surface of the Wound is not pure, there will never

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be an Union and Conſolidation of the Parts, tho' they are rendered contiguous, by proper Compreſſion and Ligature. It is, therefore, requiſite the Wound ſhould be firſt depurated by Digeſtives: But theſe cannot be applied to all the Surface of the Wound, unleſs they are previouſly ſo diluted, that, when injected into the Aperture of the Wound, they may penetrate thro' all the Parts of it. The Medicines, therefore, before recommended for cleanſing ſordid Wounds, are proper in this Caſe; but they ought to be diluted in Water, or ſome other ſuch Vehicle, that they may be of a duly-penetrating Quality. Aloes and Myrrh, mixed with the Yolk of an Egg, together with a little *Sal Ammoniac* and Honey, and then diluted with a little Water, are the beſt Medicines for anſwering this Intention.

As for a new Aperture, or Dilatation of the Wound; after ſome Days Trial of Compreſſion, and the Application of a Ligature acting on the Bottom of a deep Wound; as, alſo, after injecting depurating Digeſtives, if the Condition of the Wound is not changed for the better, we are to think of other Expedients. If the Orifice of the Wound is ſo ſmall, that the Liquids, collected in the Cavity of the Wound, cannot be diſcharged, then the former is to be dilated: But if the Situation of the Orifice of the Wound is ſuch, that the Liquids contained in its Cavity can neither, by their proper Gravity, nor a Change of the Patient's Poſture, be eliminated, then we are to think of a new Aperture, thro' which all thoſe Things, which, being left in the Wound, would prove prejudicial, may be commodiouſly removed: In order to this, the Orifice of the Wound is cloſed with a Tent, ſo that nothing can be diſcharged; then the congeſted Humours will be ſpontaneouſly collected in the lower Part of the Wound, and there form a Tumor, which will indicate the Part where the new Aperture is to be made. The ſame may be done, when, by injecting Water, the Bottom of the Wound protuberates outwards; as, alſo, when a Probe, introduced into the Aperture of the Wound, can ſo reach its Bottom, that its Point may be felt by the Surgeon's Finger; for then the Integuments may be ſafely cut upon the Point of the Probe, in order to make a new Aperture: But if the Wound deſcends deep through thick muſcular Parts, though in ſuch a manner as that the Bottom of the Wound does not lie near the Skin, but is concealed in the more internal Parts, it is far more difficult to make a new Aperture with Succeſs: In this Caſe it is moſt expedient, after cloſing the Aperture of the Wound, to apply the moſt emollient Cataplaſms to that Part where the Bottom of the Wound is ſuſpected to be, that the external Parts, being ſoftened, may eaſily yield to the Liquids collected in the Cavity of the Wound; by which means, the Place proper for the Inciſion will be found.

Dilatation is made by the Knife, Lint, Sponge, Gentian-root, and other ſuch Subſtances, introduced dry, with a Thread ty'd to them, which ſwelling, and abſorbing the Humours, by this means dilate the Wound.

The beſt Dilatation of a Wound is made by the Knife; the Pain is, indeed, intenſe, when the live Parts are dividing, but it ſoon ceaſes, whilſt the other Things, ſubſervient to the Dilatation of a Wound, by a ſlow Dilaceration, excite a pretty acute and long-continued Pain, and, at the ſame time, contuſe the Margins of the Wound; and theſe contuſed Parts muſt afterwards be ſeparated by a Suppuration: Hence thoſe, who, thro' a groundleſs Dread, will not permit the Inciſion to be made by the Knife, are racked with greater Torments.

But, in order to dilate a Wound without the Knife, they introduce into its Orifice Lint, or the like dry and bibulous Bodies, which, by abſorbing the Humours convey'd to them, are diſtended; by this means they diſtract and enlarge the too narrow Orifice of the Wound. Nor is the Force of bibulous Bodies, render'd wet, ſmall, in removing from each other the Subſtances which confine them; for Water has a ſurpriſing Property, known from Fact tho' not eaſily explain'd, by which it diſtends and enlarges the Bodies into which it inſinuates itſelf, and that ſo effectually, that, by this Force alone, immenſe Weights are rais'd, and the hardeſt Stones cloven by dry wooden Wedges, introduc'd into them, and afterwards moiſten'd, as the Quarry-diggers generally do in ſeparating from the Rocks thoſe enormous Stones from which the Mill-ſtones are work'd. See *Mem. de l'Acad. des Sciences, l'An.* 1730. and *Boyle, on the Uſefulneſs of Experimental Philoſophy*. Nor do we, as yet, know the Limits of this ſurpriſing Power. It is, however, ſufficient for our preſent Purpoſe to know, that it is capable of ſurmounting very great Obſtacles. They, therefore, put into the Orifice of the Wound dry Lint, wrapt up into a Tent, or a Piece of the moſt fungous Gentian-root, or a Piece of compreſs'd Spunge; then, by an adheſive Plaiſter, or proper Bandage, they ſo ſecure theſe, that they cannot ſlip out, whilſt, by a Reſorption of the Humours convey'd to them, they begin to ſwell: Thus the whole Force, by which theſe bibulous Bodies are diſtended, is employ'd in dilating the Wound. But among the various Subſtances us'd for dilating Wounds in this manner, none can be compreſs'd into ſo ſmall a Space, and yet afterwards ſwell ſo much, by the Reſorption of the Fluids, as Spunge; for which Reaſon, it is generally prefer'd to the others, eſpecially if, by an artificial Preparation, its Efficacy, for theſe Purpoſes, is augmented. Some uſe ſtrongly to compreſs a Bit of Spunge, by wrapping a Thread about it, and then introducing it into the Orifice of the Wound, in ſuch a manner, that the Knot of the Thread may remain without the Wound, and be cut off with Sciſſars: But as this cannot be done without Difficulty, the Deſign is far better obtain'd, in the following manner: They melt Roſin and Wax with a little Oil, in order to make a Plaiſter of a pretty tenacious Conſiſtence; in this Plaiſter, melted over the Fire, they immerſe a pretty large Piece of pure and dry Spunge, which is to be every-where penetrated by the melted Plaiſter; then they place the Spunge between two Plates of Iron, moderately warm, and, by the ſtrong Action of a Preſs, expreſs as much of the pinguious Subſtance from it as they poſſibly can, leaving it in the Preſs till it is totally cold; then the Spunge is compreſs'd into its ſmalleſt Bulk, and is ſo compact, that, like Wood, it may be cut into any Shape: That Subſtance, of an emplaſtic Nature, which remains in the Spunge after its ſtrong Expreſſion, keeps the dry Parts of the Spunge apply'd to each other, whilſt, at the ſame time, it does not hinder Water, and all aqueous Fluids, from entering into the bibulous Spunge, and diſtending it to its former Dimenſions. When, therefore, a Spunge, by ſtrong Preſſure reduc'd to the narroweſt Compaſs, and introduc'd into the Orifice of a Wound, is, by the Humours, diſtended to the greateſt Dimenſion which it is capable of, it is ſufficiently obvious, how great a Dilatation may be produc'd by this means: Beſides, a Spunge, thus prepar'd, has this Advantage, that it can be cut into the ſmalleſt Shreds capable of entering the narroweſt Orifices of Wounds and *Fiſtulas*; which Advantage cannot be obtain'd by Lint, Gentian-root, or any other Subſtance us'd for that Purpoſe.

But to all theſe Tents, whether of Spunge, or any other Subſtance, a Thread muſt be ty'd, leſt they ſhould ſlip into the wider Cavity of the Wound, and there produce many bad Conſequences; for without this Caution, they could not be extracted, without great Difficulty. *Van Swieten. Com. in Boerh. Aphor.*

Of Gun-shot Wounds.

Gun-ſhot Wounds are attended with worſe Conſequences than thoſe which are inflicted with ſharp Inſtruments, as the Parts are more bruis'd and ſhatter'd, eſpecially when the Bones, Joints, or ſome of the principal Members, receive the Shot.

As Wounds of this kind have generally an Eſchar form'd upon them, little or no Effuſion of Blood at firſt enſues, unleſs ſome of the large Veins or Arteries be wounded; but when, after ſome Days, the Eſchar falls off, a violent Hæmorrhage is produc'd, which, without the Aſſiſtance of a Surgeon, may occaſion the Death of the Patient. For the firſt Days, alſo, little or no Matter is diſcharg'd; whence it is not ſurpriſing, that no Wounds are ſo ſubject to Inflammations, Pains, Gangrenes, and Putrefaction, as Gun-ſhot Wounds.

As theſe Eſchars reſemble thoſe produc'd by the Application of a red-hot Iron, they were formerly imagin'd to be produc'd by the Heat of the Bullet; but they rather appear to be produc'd by the ſudden Colliſion of the Parts: And to this Colliſion may be aſcrib'd all thoſe Inconveniences which accompany thoſe Wounds. Formerly it was thought that theſe Wounds were poiſonous; but this Opinion ſeems to be ill-grounded, as neither the Powder, nor the Ball, have any poiſonous Subſtance in their Compoſition.

Gun-ſhot Wounds are more or leſs deep. In ſome the muſcular Parts, in others the larger Blood-veſſels, the Bones, or *Viſcera*, are wounded. Sometimes the Ball penetrates thro' the Part, and ſometimes remains fix'd in it; ſometimes Pieces of the Cloths, or Wadding, are force'd into the Wound.

Wounds of this kind, in the *Cranium*, are commonly extremely dangerous: For tho' they may appear but ſlight, and the Ball may ſeem only to have lightly graz'd upon the Part, yet their Conſequences are ſo pernicious, that either the *Cranium* itſelf is ſiſſur'd in ſeveral Places, or the internal Blood-veſſels are broke, and the Blood is diſcharg'd into the *Sinuſes* of the Brain. It is ſometimes ſurpriſing how ſlight a Wound of this kind, will occaſion a ſpeedy Death, unleſs the Blood in the *Cranium* be timely evacuated, by the Aſſiſtance of the Trepan. But theſe Wounds, in the *Cranium*, are dangerous, in Proportion to their Violence.

Internal Wounds, of this Sort, are difficult to heal; but if none of the larger Veins or Arteries are lacerated, they may admit of a Cure. When the Bones or Joints are ſhatter'd by the Ball, violent Inflammations, a Gangrene, *Sphacelus, Caries*, and incurable *Fiſtulæ*, can ſcarcely be avoided; which either require Amputation, or deprive the wounded Part of Senſe and Motion.

If any Part of the Cloths, Linen, Skin, or Wadding, is lodg'd in the Wound, it ought not to be heal'd before the extraneous Subſtance be extracted: This Caution muſt be obſerved with regard to carious Bones, and oſſeous Splinters.

In the Cure of theſe Wounds, obſerve the following Rules: 1. To extract any foreign Subſtance lodg'd in the Wound. 2. To ſuppreſs the Hæmorrhage. 3. To promote Suppuration. 4. To fill the Wound with new Fleſh. 5. To produce a Cicatrix.

As ſoon as the Surgeon is call'd, he ſhould carefully ſee if he can find any extraneous Subſtance conceal'd in the Wound, if there is, he ſhould immediately extract it with his Hand, if poſſible,

poſſible, or elſe with a toothed or hollow Forceps, or with a two-prong'd Hook (as repreſented in *Tab.* XXIV. *Fig.* 3, 4, 5, 6, 8.). If the Subſtance lodg'd in the Wound be deeply ſeated, the Wound muſt be ſearch'd with the Probe, and the Subſtance with all convenient Expedition be extracted; for this Operation is much eaſier perform'd when the Wound is recent, than when it becomes tumefy'd and inflam'd. Another bad Conſequence, attending a Delay in this Caſe, is, that the Balls, ſinking deep under the Muſcles, cannot be taken out, and, conſequently, malignant *Fiſtulas*, a Stiffneſs of the Limb, and other bad Symptoms, are produc'd. In extracting theſe Balls, the Operator muſt take particular Care, not to break any of the Veins, Arteries, Nerves, or Tendons, which would occaſion very dangerous Conſequences; upon which account, he ſhould introduce the Forceps ſhut, and not open them till the Point touches the Ball.

If the Ball, or other extraneous Body lodg'd in the Wound, has ſunk deep, or if the Wound be ſo narrow, that it cannot be conveniently extracted, the Orifice muſt be enlarg'd by Inciſion, on that Side which may ſeem moſt ſafe and proper: But particular Care muſt be taken, not to wound a Nerve, Vein, Artery, Ligament, or Tendon. When an extraneous Subſtance is lodg'd in a Wound of this kind of ſome Standing, the Orifice of which is contracted, with the Swelling and Inflammation, this Sort of Inciſion is often very beneficial; for it not only opens a convenient Paſſage for diſcharging the inſpiſſated Blood, but, alſo, prevents violent Inflammations, and the like Inconveniencies. But as two Balls frequently happen to be lodg'd in the ſame Wound, the Surgeon, after one is extracted, muſt carefully ſearch for another; for as long as any extraneous Subſtance is conceal'd in the Wound, the Cure will be protracted.

In extracting theſe foreign Subſtances, the Patient ſhould be plac'd in the ſame Poſture he was in when the Shot enter'd his Body; for, by changing the Poſture of the Body, the Shot is ſubject to be loſt in the Muſcles, Membranes, or Fat, ſo as not to be reach'd by the Probe, or other Inſtrument: But when the Ball has penetrated ſo deep, as to be felt by the Finger on the oppoſite Part of the wounded Limb, the Surgeon ought to conſider, from the Diſpoſition of the wounded Parts, whether it be preferable to extract the Ball by the Orifice of the Wound, or by laying the oppoſite Part of the Member open by Inciſion: But if the Wound can neither be enlarg'd, nor the Shot extracted, without endangering the Nerves and Arteries, it ought to remain in the Wound, till the Pain is abated, or till the Paſſage is render'd ſo eaſy by Suppuration, that they work themſelves out. On the other hand, extraneous Bodies ought to be extracted, without Delay, when, by their Continuance in the Wound, they threaten to raiſe Convulſions, Pain, and other pernicious Symptoms. If the Ball has penetrated into any of the Cavities of the Body, whence it cannot be conveniently or ſafely extracted, the beſt Method is, to leave it where it is lodg'd, and heal the Wound: In this manner they have long continu'd, and often, during Life, without any Danger, or Inconvenience; and ſometimes they will work themſelves into other Parts of the Body, whence they may be ſafely and eaſily extracted.

When the Shot is lodg'd in the Bones, it ought to be extracted in the ſame manner, with the notch'd Forceps, or Hook: If that Method proves unſucceſsful, it may be brought out with a Screw: But where the Shot is cover'd with much Fleſh, as in the Calves of the Legs and Thighs, a peculiar Sort of Screw is requir'd, like that delineated in *Tab.* XXIV. *Fig.* 7. But if the Shot is too firmly fix'd to yield to any of theſe Methods, it muſt be ſuffer'd to remain in the Wound till it is looſen'd by Suppuration. Balls lodg'd in the Joints muſt be extracted with the utmoſt Expedition; for, in this Caſe, Delays are extremely dangerous: Nor can violent Pains, Inflammations, and Caries of the Bones, which generally require Amputation of the Limb, be, without Difficulty, prevented.

When, in a Gun-ſhot Wound, the Joint or Bone is extremely bruiſed, it is better to remove the Limb immediately by Amputation, than to labour long in vain, to obtain a Cure: For as the natural Form of the Joints can never be reſtor'd, ſo the Nerves, Tendons, and Ligaments, which adhere to the ſhatter'd Bone, being broken, violent Inflammations, a Gangrene, and *Sphacelus*, are by theſe means induc'd: But when the Colliſion of the Bone is not very violent, the Surgeon ſhould gently remove any Splinters of the Bone, or extraneous Subſtance lodg'd in the Wound, which may then be cur'd after the uſual Method.

If a large Artery, of the Arms or Legs, ſhould be wounded by the Shot, which may appear from the Effuſion of Blood, the *Tourniquet* muſt be immediately apply'd, to ſtop the Hæmorrhage, till the Artery can be ſtitch'd up with a crooked Needle and Thread: and this Method I have ſucceſsfully try'd. But if this ſhould be impoſſible to be perform'd, the Limb muſt neceſſarily be amputated, taking care, firſt, to apply the *Tourniquet*, a little above the Wound, in order to ſtop the Hæmorrhage.

The Wound being cleanſed, and the Effuſion of Blood ſtopt, if neceſſary, the firſt Intention of Cure is, to prevent, or, at leaſt, alleviate the Swelling and Inflammation: For this Purpoſe, let the Wound be fill'd with Lint dipt in warm Spirit of Wine, and apply Compreſſes, moiſten'd in the ſame Liquor, or in camphorated Spirit of Wine, or in Spirit of Wine diluted with Lime-water.

The next Intention is, to forward the Suppuration of the bruiſed and corrupted Parts; and, for this Purpoſe, beſides the common digeſtive Ointment made of Turpentine and the Yolk of an Egg, the following may be uſed:

Take of *Unguentum Baſilicon*, and *Arcæus*'s Balſam, each an Ounce; Spirit of Wine, and Oil of Eggs, each a Dram: Mix, and make them into an Ointment.

Add to theſe, if the Corruption is violent, a little Myrrh, and Aloes, *Theriaca*, *Unguentum Fuſcum*, and, in Parts not very nervous, a little red Precipitate.

In Wounds where the Ball has quite penetrated the Limb, paſs a long, blunt Needle (ſee *Tab.* XXVI. *Fig.* 1.), arm'd with a ſmall linen Cord, well moiſten'd in the Ointment above-preſcrib'd, thro' the Middle of the Wound, like a Seton; let this Cord be drawn backwards and forwards, and kept in the Wound, till, from its Redneſs, it appears that the corrupted Parts are thrown off, and that the Wound is ready to heal; then the Cord may be drawn out.

You may now proceed to incarn, and induce a neat Cicatrice, with balſamic Medicines, as in other Wounds. Some uſe here a vulnerary Water, call'd, by the *French*, *L'Eau d'Arquebuſade*. See AQUA SCLOPETARIA.

The concomitant bad Symptoms of Gun-ſhot Wounds, ſuch as the Hæmorrhage, Fever, Swelling, Inflammation, Pain, and Convulſions, may be treated as in other Wounds, unleſs where the Violence of the Colliſion and Contuſion make them more ſubject to Corruption and Putrefaction. If, as it almoſt always happens, the Lips of the Wound become black, livid, flaccid, and fetid, Care muſt be taken to ſeparate the corrupted Fleſh from the ſound: For this Purpoſe, apply the *Unguentum Ægyptiacum*, diluted with Spirit of Wine, or mix'd with an equal Quantity of the digeſtive Ointment; or a little red Precipitate may be added to the digeſtive Ointment; then put on the Compreſſes, after they have been thoroughly moiſten'd with warm camphorated Spirit of Wine, mix'd with *Theriaca*; or with Lime-water ſtrengthen'd with Spirit of Wine. If the Corruption penetrates deep into the Fleſh, Scarifications and Inciſions muſt be made, till the latent corrupted Humours are diſcharg'd, and the Applications reach to the ſound Parts: If theſe Remedies are not effectual, more powerful Medicines muſt be uſed for conſuming the Fleſh; ſuch as the *Aqua Phagedenica*, made of Lime-water and Mercury Sublimate; or one Pound of Lime-water mix'd with one Ounce of crude Quickſilver diſſolv'd in two Ounces of *Aqua Fortis*. Theſe Applications are, alſo, uſeful, in a Caries of the Bone; but in Wounds of the Joints or Ligaments, as theſe acrid Applications cannot be made with Safety, we muſt have recourſe to Balſamics; ſuch as the *Eau d'Arquebuſade*, *Peruvian* Balſam, Tincture of Myrrh and Aloes, prepar'd with *Sal Ammoniac*, and Spirit of Wine, Eſſence of Amber, Spirit of Maſtich, *Hungary* Water, Oil of Turpentine diluted with this Water, and the like; which muſt be inſtil'd into the Wound moderately warm.

Internal balſamic Medicines which reſiſt Putrefaction, are, at the ſame time, not to be neglected: Of this kind are, the *Elixir Proprietatis*, the Eſſence of Myrrh and Aloes, the Eſſence of Amber, *Peruvian* Balſam, and the like; thirty or forty Drops of which may be given to the Patient, for ſeveral Days. If the Patient be very weak, let him take ſome cordial Pills, with the *Confectio Alkermes*, and ſome cordial Syrup: Proceed in the Remainder of the Cure as in other Wounds.

By the Exploſion of Guns it often happens, that ſome Grains of Gunpowder enter the Skin of the Face, and produce unſeemly Spots, if they are not timely taken out: When the Grains do not entirely penetrate the Skin, they may be taken out with a Forceps, or a Quill ſhap'd like a Tooth-pick, or an iron Inſtrument in the Form of an Ear-pick; but if they reach below the Skin, before they can be laid hold of, the Skin muſt be laid open with a ſlender Knife, or Lancet, and then they may be extracted as before: The Operation muſt be repeated till all the Grains are taken out, and Care muſt be taken, that they are not broken in the Extraction, otherwiſe the Spots will continue. *Heiſt. Chirurg.*

Mr. *Ranby*, in his *Method of treating Gun-ſhot Wounds*, tells us, that, in removing the Accidents produc'd by the Ball of a Muſquet or Piſtol, the firſt Intention is, if poſſible, to extract the Ball, or any other extraneous Bodies which may be lodg'd in the wounded Part; and whenever Misfortunes of this kind are attended with an exceſſive Effuſion of Blood, in conſequence of the Rupture of ſome conſiderable arterial Veſſel, it is abſolutely neceſſary, with all Expedition, to ſtop the Hæmorrhage, by taking up the Artery with a proper Needle, and ſo carefully, that the Hold may not prove eluſive; becauſe, in Caſes of this Nature, no Applications, however ſtyptic, are to be depended on.

In order to get at the Ball, or any other foreign Matter infeſting the Wound, Searches by the Probe are to be uſed as ſparingly as poſſible; ſince it is certain, from Experience, that ſuch a Practice is highly detrimental to the Patient: And where there is an abſolute Neceſſity for this Method, the Finger is always to be prefer'd, as the beſt, and leaſt dangerous Probe.

If the Ball, or any other Subſtance, is lodg'd near the Orifice of the Wound, or is, by the Finger, perceiv'd to be under

the Skin, tho' at ſome Diſtance from the Mouth of the Wound, we muſt, in the former of theſe Caſes, remove the extraneous Matter, with all Expedition; and, in the latter, cut upon it, and take it out: But if the Ball, or other Subſtance, ſhould be ſunk ſo deep, as to be abſolutely beyond the Reach of the Finger, it is by no means adviſeable to extract it, by forcibly introducing a Pair of long Forceps: Since it is certain, from Experience, that ſuch a Practice ſeldom fails to produce a Train of terrible Symptoms; and ſince numberleſs Inſtances occur, in which Balls, after having been lodg'd in the Body for many Years, without incommoding the Patient, have, in Proceſs of time, work'd their Paſſage to the Surface, and were, conſequently, eaſily extracted.

As Wounds, made by the Balls of a Muſquet, or Piſtol, are but ſmall; ſo it is neceſſary to dilate them, with all Expedition; but if they ſhould be inflicted near a Joint, or in a very membranous or tendinous Part, the Knife, as well as Forceps, ſhould be uſed, with the greateſt Caution, and no larger a Dilatation made, than is abſolutely requiſite for the free Diſcharge of the Matter lodg'd within: For Wounds in the Joints, whether produc'd by a Bullet, a cutting Inſtrument, or any other Cauſe, are always dangerous. And ſuch Parts as are membranous, or tendinous, never fail to ſuffer, by being expoſed to the ſenſible Impreſſions of the Air.

If a Ball has gone entirely thro' any Part, both Orifices, where it can be done with Safety, are to be dilated, and both carefully kept open, eſpecially that in the moſt depending Part. Tents are never to be uſed where there is a Poſſibility of avoiding them; light, eaſy Dreſſings, are always beſt, and ought to be ſecur'd with a Bandage of thin Flannel, if it can be had, no tighter than is neceſſary to keep them on the Part.

When the wounded Perſon has not ſuffer'd a great Loſs of Blood, it is expedient, immediately, to take a large Quantity from a Vein open'd in the Arm, and to repeat Veneſection the ſecond, and even the third Day, if Circumſtances call for it: This timely Precaution will prevent a good deal of Pain and Inflammation, promote the Digeſtion, and contribute to prevent a numerous Train of complicated Symptoms, which otherwiſe generally interrupt the Cure, miſerably haraſs the poor Patient, and too often endanger his Life.

During the firſt twelve Days after the Reception of the Wound, it is proper to obſerve a cooling Regimen, both with reſpect to the Medicines preſcrib'd, and the Diet requiſite for the Support of Nature: And as, in Circumſtances of this Nature, the Body ſhould, by all means, be kept ſoluble, a Stool ſhould every Day be procur'd, either by emollient Clyſters, or ſome gentle Laxative taken internally.

All Applications of an hot and ſpirituous Nature are remarkably injurious, and productive of ſuch Pain, that the wounded Part can by no means bear them. The firſt Dreſſing ſhould conſiſt of Lint, either dry, or moiſten'd with a little Oil, and ſecur'd by a very ſlight Bandage; the next ſhould conſiſt of a proper Digeſtive, warm'd, and cover'd with the Bread and Milk Poultice, mix'd with a Quantity of Oil ſufficient to keep it moiſt; and where there is great Tenſion, and the Wound large, a proper Fomentation is to be uſed: This Courſe is to be continu'd till the Wound is clean, after which, it is to be heal'd in the ordinary manner: This Method generally promotes a conſtant and eaſy Perſpiration, abates the Pain, greatly facilitates the Digeſtion, and removes all Apprehenſions of an approaching Inflammation. The Reaſon why the Lint ſhould be moiſten'd with Oil is, the great Eaſe procur'd to a contus'd Wound from ſuch an Application, in compariſon of a drying and abſorbent Dreſſing; which, inſtead of giving a free Diſcharge to the ſanious Blood, and preventing an Inflammation by unloading the Part, would poſſibly obſtruct the Mouths of the capillary Veſſels, and hinder Nature from getting rid of that Incumbrance, which, it is obſervable, ſhe ſo much endeavours to throw off.

When an Inflammation ſeizes any Part, in conſequence of the Lodgment of a Bullet, or any other foreign Body which might have been ſafely extracted immediately after the Reception of the Wound, all Attempts to diſlodge ſuch extraneous Matter muſt be poſtpon'd, till the Swelling is, in ſome meaſure, abated, and the inflammatory Diſpoſition of the Fibres nearly remov'd; unleſs the Ball, or other offending Matter, lies at no great Diſtance from the Orifice, and there is, on that Account, a Certainty of removing it, without any great Uneaſineſs to the Patient.

When a Wound is of ſuch a deſperate Nature, as to render Amputation neceſſary, which frequently happens when it is inflicted in any important Joint, it is expedient to perform the Operation immediately, and without Delay; leſt, by poſtponing it, an Inflammation, which is reaſonably to be dreaded, ſhould prevent a Work which ought rarely to be attempted during the Continuance of ſo unlucky a Circumſtance. The neglecting this favourable Juncture of taking off a Limb, frequently reduces the Patient to ſo low a State, and ſubjects the Blood and Juices to ſuch an Alteration, as muſt unavoidably render the ſubſequent Operation, if not entirely unſucceſsful, yet, at leaſt, exceedingly dubious: And even in Wounds where Amputation is not neceſſary, it is equally adviſeable, not to defer the Meaſures proper to be taken, leſt, in conſequence of the expoſing the Parts to the Air, a Series of very dangerous Symptoms ſhould be brought on.

Wounds contiguous or adjacent to any conſiderable Artery are ready to bleed afreſh, upon any Motion of the Patient, or the Return of a free Circulation of the Blood into the Part, which was at firſt obſtructed by the Violence of the Injury done it; and this generally happens when the Eſchar begins to ſeparate: For this Reaſon, we ſhould never attempt a forcible Removal of the Eſchar, but patiently wait for its perfect Separation, without being in the leaſt ſhock'd at the Opening of the Arteries, which is found to be almoſt inevitable: But the Approach of this Accident may be frequently predicted, from the Patient's complaining of an exceſſive Weight and Fulneſs of the Limb, which Symptoms are always accompanied with more or leſs Pulſation; an infallible Prognoſtic of the Conſequences. When theſe Symptoms appear, Bleeding, and the uſe of the Bark, are inſtantly to be order'd, in whatever Part of the Body the Wound is inflicted.

I have known, ſays our Author, ſeveral Inſtances of Perſons loſing their Lives, from the ſtarting of an Artery, before the Surgeon could come to their Aſſiſtance, eſpecially where an Amputation has preceded; and I dare affirm, the Quantity of Blood loſt, particularly after an Amputation, has not amounted to twelve Ounces; which I cannot account for otherwiſe than by the Drain which had been made from the Maſs of Blood, both before and during the Operation: Whence the ſudden Diſcharge, tho' of ſo ſmall a Portion of Blood, after the great Quantity before loſt, gives a Check to the Circulation, and produces immediate Death. This Reflection ought to be a Leſſon of Inſtruction to every Practitioner, to be particularly careful in tying the Veſſels.

Repeated Bleedings in the Beginning are attended with many Advantages, ſince they generally prevent, and always leſſen any feveriſh Paroxyſms, and ſeldom fail to guard againſt Impoſtumations: The Body muſt always be kept in a laxative State, and when the Patient is rack'd with Pain, we muſt have immediate recourſe to proper Preparations of *Opium*.

Probes, Forceps, Mallets, Chiſſels, and various other Inſtruments, ought never to be us'd, except in Caſes of abſolute Neceſſity; ſince, without doing any Honour to the Surgeon, they not only rack the Patient with Pain, but, alſo, expoſe his Life to Danger. But, for a farther Confirmation of this, let us ſuppoſe a Ball lodg'd in any Part beyond the Reach of the Finger, and entirely out of the Way of being perceiv'd by the external Touch: In ſuch a Caſe, it muſt evidently appear, upon the leaſt Reflection, that thruſting firſt a long Probe in queſt of the Bullet, and then a Pair of long Forceps, either with or without Teeth, into a Wound of this kind, tho' with a kind of Certainty, to extract the foreign Matter, muſt either contuſe, or irritate and inflame the Parts to a great Degree, and, conſequently, do as much, or, perhaps, more Miſchief, than the Ball did at firſt by forcing its Paſſage ſo far into the Parts: And ſhould the Forceps lay hold of any Nerve, Artery, or even common Membrane of a Muſcle, together with the Ball, which, in all Probability, muſt continually happen, very ſhocking Conſequences muſt neceſſarily attend ſuch a Practice: Nor would Attempts of this kind prove leſs injurious, in Caſes where Bullets are lodg'd in the Cavities of the Abdomen, or Thorax; whereas it is certain, from Experience, that Lead may lie for a long time in ſeveral Parts of the Body, without producing any conſiderable Pain, or even Inconveniencies.

Chiſſels ought, on no Occaſions, to be us'd, ſince they too frequently ſplit the Bone up to the next Joint, or ſhatter it in ſuch a manner, that, inſtead of promoting a Cure, by ſafely removing the Part affected, they generally bring on Symptoms worſe than the original Diſorders they were intended to remedy. A good Knife is certainly all that is neceſſary, for taking off a Finger; or ſhould one of the Bones of the *Metacarpus* require Amputation, a ſmall Spring-ſaw does the Work, with great Eaſe and Safety. With reſpect to the uſe of the *Peruvian* Bark in Gun-ſhot Wounds, ſee the Article QUINQUINA.

VULPANSER. Offic. Bellon. des Oyſe. 159. *Vulpanſer ſive Chenalopex.* Jonſ. de Avib. 94. *Chenalopex, Vulpanſer.* Mer. Pin. 179. *Tadorna.* Bellon. des Oyſe. 172. *Tadorna, quibuſdam Vulpanſer.* Raii Ornith. 362. *Tadorna Belloni, Vulpanſer quibuſdam.* Ejuſd. Synop. A. 140. THE SHELL-DRAKE, BURROUGH-DUCK, or BER-GANDER.

It is obſerv'd in maritime Places; and the Fat, which is the Part uſed in Medicine, is recommended, by ſome, againſt the Herpes, and Tumors of the Face. *Dale.*

VULPECULA MARINA. The Sea Fox, otherwiſe called *Simia Marina*, or *Alopecias Oppiani.* This is a very large Fiſh, of the cetaceous kind, the Fat of which is eſteem'd emollient, and reſolvent.

VULPES. Offic. Schrod. 5312. Aldrov. de Quad. Digit. 195. Raii Synop. A. 177. Schw. Quad. 133. Ind. Med. 125. Jonſ. de Quad. 92. Charlt. Exer. 15. Geſn. de Quad. Digit. 966. Mer. Pin. 167. THE FOX.

Adapted to medicinal Uſes are the *Fat*, *Lungs*, *Liver*, *Gall*, *Milt*, *Skin*, *Blood*, *the whole Animal*, and its *Dung*. The *Fat* is of uſe in Convulſions, Contractions, Tremblings, and the like Diſorders; alſo, in Pains of the Ears, Wounds of the Head, and an *Alopecia*. The *Lungs* are conſolidating, and abſtergent, and therefore of Efficacy in Diſeaſes of the Lungs, &c.